REFORMULATED GASOLINE
AND ANTI-DUMPING PROGRAM

ELECTRONIC DATA INTERCHANGE
TECHNICAL GUIDELINE

REVISION 2.0

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Summary of Major Changes to Version 2.0

- Correction was made to permit the designation of “company confidential” information through the Electronic filing format. See section 2.4, “Security,” for general information.

- Correction was made to indicate the recent change from the Field Operations and Support Division (FOSD) to the Fuels & Energy Division (FED). This change was a result of an OMS-wide reorganization in September, 1995.

- References to renewable oxygenates and “ROX” have been removed, consistent with the recent decision of the U.S. Court of Appeals (D.C. Circuit) against the Agency on the renewable oxygenate rule.

- The REFGAS code list (see 8.3.1, “Controlled Code Lists 1-9)) was updated to include the entry “AS” for “alternative simple model” gasoline.

- All data maintenance requests that EPA submitted to X12 have been cleared as of version/release 003060 of the standards, so this guideline implements that version/release.

- Additional changes and corrections were made as necessary.

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SECTION 1 - INTRODUCTION

1.1 Purpose of Guideline

This technical guideline is provided by the United States Environmental Protection Agency (herein referred to as EPA, or the Agency). It presents an overview of the EPA and Electronic Data Interchange (EDI) for the Reformulated Gasoline and Anti-Dumping Programs (REFGAS) of EPA's Office of Mobile Sources, Fuels and Energy Division (FED). EDI refers to the transmission, in American National Standards Institute, Accredited Standards Committee X12 (ANSI ASC X12) standard syntax, of unambiguous information of business or strategic significance between computers of independent organizations. Other acceptable identifications of this standard are ASC X12, ANSI X12, or X12.

1.2 Scope and Applicability

This Technical Guideline is intended to provide prospective EDI reporting parties with the information necessary to understand the technical requirements of the EPA Reformulated Gasoline and Anti-Dumping Programs, and provides practical guidance for reporting reformulated gasoline data in an electronic environment.

1.3 RFG EDI Objective

The objective of the Reformulated Gasoline (RFG) EDI Program is to facilitate the required data reporting, eliminate paper, speed processing and simplify data review. EPA has developed an electronic approach that will benefit both the reporting party and the Agency. This approach includes:

- Implementing EDI using ANSI ASC X12 standards;
- Using existing X12 transaction sets: the 863 Report of Test Results, the 867 Product Transfer and Resale, and the 997 Functional Acknowledgement;
- The development of EPA-specific convention documents; and
- Seeking voluntary collaboration with the refiners, blenders and importers of regulated gasoline.

1.4 Introduction to EDI

EDI is the transmission in ANSI ASC X12 syntax of unambiguous information of business or strategic significance between computers of independent organizations. The definition can be expanded further to include the electronic transmission of business documents from the application program of one computer to the application program of another computer within the framework of a standard format. The key elements in the definition are computer-to-computer and standard format. EDI reduces costs and errors associated with a paper document environment. EDI replaces the mail delivery and reentry of documents with the electronic mailbox and the delivery of business data directly to a computer database system. An EDI message is a single data stream, including the outer envelope, that is transmitted from one party to another.

1.5 How to Use the Technical Guideline

The technical guideline follows the ASC X12 recommended format specified in the "EDI Implementation Reference Manual Guidelines", approved February 1991, ASC X12 D/90-856. (DISA Catalog No. 0179) Sections 1-10 contain information necessary for RFG reporting parties to fulfill the requirements for implementing a RFG EDI program. These sections include the EDI business background and history, EPA policy and logistic issues, and a checklist on how to get started with EDI. Appendices contain the usage conventions of the specific X12 transaction sets that satisfy the information requirements of the RFG EDI Program.

SECTION 2 - BUSINESS ISSUES

2.1 Implementation Considerations

RFG EDI currently use the following ASC X12 transactions sets:

863 Report of Test Results. Version 3 Release 6.
~~867 Product Transfer and Resale~~ *(to be implemented at a later date)*
997 Functional Acknowledgment

The 863 transaction set is mapped in detail in Appendix A. An example of a Functional Acknowledgement 997 is located in section 10.3.1.

2.2 Timing of Transactions

The EDI data must be received by EPA in accordance with the reporting dates specified in the RFG regulation. Section 9.4, Forms and Reports, contains a chart of the Reports and the Regulatory Deadlines as of this publication. The deadlines are also repeated in the introduction section of each report appendix.

Reporting parties can transmit data at any time prior to the appropriate reporting deadline. Messages are retrieved daily. A Functional Acknowledgement (transaction set 997) is generated to confirm receipt and successful translation of a message. The date and time stamp of the submitted information is considered to be the time at which the corresponding 997 is generated. The 997 does not acknowledge the validity of the data, only its receipt. The reporting party must ensure that a RFG transmission is sent early enough to assure that the message can be successfully translated before the scheduled deadline.

If a transaction set 997 is not received, it is the responsibility of the party who sent the initial message to take action to assure that their transaction was received by the other party in translatable form. The transmission of a transaction set 997 does not require a 997 in return.

Each message should be retained in both translated and transmitted format by the parties to ensure that a history of the data transmitted and received is maintained.

2.3 Modes of Operation

The two modes of operation are *Production* and *Test.* Production is used when both parties agree that their systems are communicating and exchanging transaction sets properly. The test mode is used when implementing a new transaction, when making a modification to implemented transactions, or when upgrading to a new version /

release. The parties should be aware of when the test mode will be used in order to provide assistance to each other. Identification of the mode of operation is contained in the ISA (Interchange Control Header) Position ISA15, Data Element I14. A "P" identifies production data and "T" identifies test data.

EDI systems must have the provision to handle both production and test modes of operation.

2.4 Security

The risks inherent in the EDI process are based on the lack of paper documentation to backup the transactions. EDI involves the transmission of electronic messages, or records, that may never be converted to hard copy. Therefore, the electronic records must be able to stand alone as submission data. These records are subject to the same security requirements as are all types of EPA data. The EDI process must include all steps necessary to ensure that the records are authentic, are properly authorized, and are retained in a manner that will ensure the integrity of the records. Audit trails must be maintained for accountability.

RFG EDI uses the dual Personal Identification Number (PIN) concept to ensure the submitted reports are properly authorized. The dual PIN concept utilizes a PIN for the company and a PIN for the person certifying the accuracy of the information in the report. PIN administration is the responsibility of the FED office.

It is the responsibility of the reporting party to ensure the security of the PINS. If a reporting party suspects a breach in this security, the FED office must be contacted immediately. Reporting parties are also responsible for the security of VAN log-on access numbers.

A Security Level Code, DE (data element) 786 has been added to the beginning segments of the 863 and 867 transaction sets to provide identification; the transaction set contains *Confidential Business Information* (CBI). **The appropriate value for company confidential information is “02".**

2.5 Backup and Recovery Procedures

Backup and recovery procedures are necessary to provide:

- Retransmission capabilities;
- Translator re-run capabilities;
- Minimum 24- to 48-hour immediate access backup; and
- Archive and recovery capabilities for individual EDI messages.

The backup and recovery procedures must be thoroughly documented to allow anyone with the proper authority to access the system to retransmit data.

It is the responsibility of the reporting party to maintain records and archives of EDI messages sent and received. Reporting parties must have the capability to retransmit an EDI message.

The Functional Acknowledgement (997) transaction set can be used to provide a level of automation in the backup and recovery area. If the EDI system expects to receive a Functional Acknowledgment for every transaction it sends, the EDI message should be available for retransmissions until a Functional Acknowledgement corresponding to a specific EDI message is received. Once the Functional Acknowledgment is received, the original EDI message can be archived regardless of the normal archive timing.

FED requires the use of the Functional Acknowledgment. The Functional Acknowledgment is used to confirm receipt of the reporting party's message and indicate acceptance or rejection of the transaction set by the translator. A Functional Acknowledgment is not required for a transmission of Functional Acknowledgments.

It is suggested that reporting parties develop a plan to deal with extreme problems, such as a total loss of a Data Center, computer system, or a phone company switch station.

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SECTION 3 - ENVIRONMENTS

3.1 System Architecture

RFG information submitted via EDI by refiners, blenders, importers, and independent laboratories must be translated into the ASC X12 transaction sets as detailed in the appendices of this technical guideline. The transaction sets are placed into an EDI envelope for communication to EPA.

Communication to EPA is through a third party Value Added Network (VAN). EPA has selected **the AT&T** EDI VAN. Reporting parties may choose another VAN, in which case a VAN-to- **AT&T** interconnect is required.

EPA accesses their **AT&T** mailbox daily, with the exception of weekends and federal holidays.

The following details the data flow for RFG EDI data from EPA's perspective:

1. EPA polls the **AT&T** mailbox for new mail.

2. If new mail exists, EPA downloads the new mail to a secure storage system. The file is marked with date and time of receipt.

3. A copy of the each received file is made to an optical disk prior to additional processing.

4. EPA uses a translation software to read the ASC X12 formatted messages.

5. As part of the translation, the translator conducts format checks and generates a functional acknowledgement with a pass or fail indicator. For failures, the authorized representative of the reporting party will be contacted.

6. The functional acknowledgement is addressed to the originator and transmitted to through the **AT&T** VAN on the next connection. If the message passed the format tests, the process proceeds.

7. The data is translated to an internal format and written to a flat ASCII file or to an Oracle input file.

8. An application front-end processor picks up the file and sorts the transaction sets by report type.

The following describes the initial steps performed by the application system for Batch Reports:

1. If the report is a batch report, processing proceeds.

2. Determine whether the report is an original or a re-submission.

3. Verify the reporter's registration ID against the registration database.

4. Verify that the reporter is valid for the batch number. That is, that the reporter either owns/operates the facility or is the independent lab for that facility.

5. Verify the company and personal PINs against the PIN database.

6. Check for existence of the batch ID (the same reporter and the same batch ID #) in the database. This indicates a duplicate submission.

7. If the transaction is indicated as an original and it is confirmed that it is not a duplicate, proceed to step #10.

8. If the transaction is indicated as an original and a duplicate situation exists, reject the transaction and flag for resolution.

9. If the transaction is a re-submission and not a duplicate, reject the transaction and flag for clarification.

10. Check to be sure that all values are formatted correctly and that numeric values are reported to the proper precision.

11. Perform range checks on values in batch report (see regulations for valid ranges).

12. If the report passes all checks, proceed. If it fails, reject and flag for resolution.

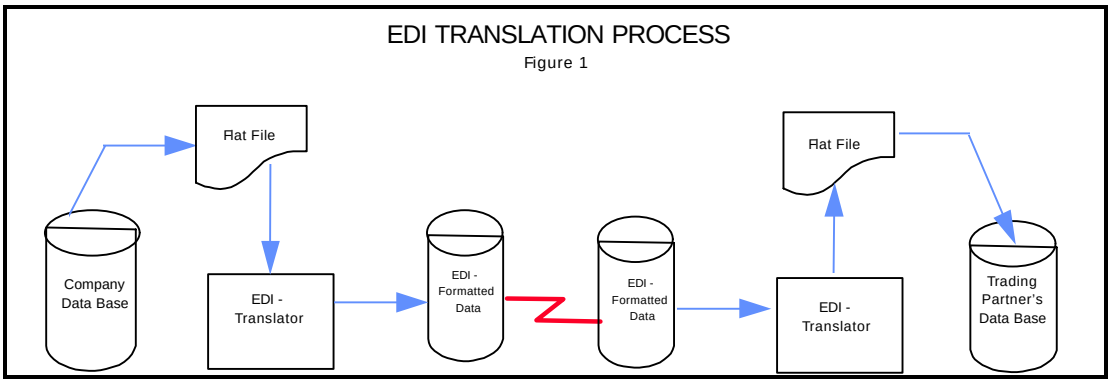
13. If the transaction is a resubmission, write old record to archive batch report table and write new information to batch report table.

14. If original, write record to batch report table.

3.2 Translation

Translation is the automated process of converting application data extracted from an application database into a standard EDI format. It also refers to the conversion of EDI-formatted data received from Reporting Parties into a file format which internal systems will recognize. Most core translation programs use "table driven" subroutines to generalize processing regardless of the application or data file structures.

Translation specifications are input to the program which detail the data being processed and how it "maps" to the associated ASC X12 transaction set. The ASC X12 standard provides a specific structure for the data. Translation is independent of any application program design or program functions.



Translator software should have the following minimum capabilities:

- The software should contain communications capabilities to send and receive EDI-formatted data using the ASC X12 standards.

- The software should provide an application system interface program that extracts data from an application data base and creates fixed-length files in the vendor's format for subsequent translation to an EDI format. The reverse is also required.

- The software should provide a reporting facility to generate error reports of outbound or inbound messages and inbound and outbound transaction set reporting.

- The software should provide the ability to send or receive Functional Acknowledgements, to identify the successful receipt of information by Reporting Parties, and highlight unacknowledged transaction sets that have been sent.

- The software should provide facilities to edit inbound and outbound data to determine whether they are in compliance with EDI standards.

- The software should provide a facility that monitors the use of internal business document identification numbers, such as batch numbers, to avoid duplication.

- The software should maintain EDI data elements and segments in a table structure.

- The software vendor should provide technical documentation, user documentation, maintenance support, help desks, tutorial packages and training support to assist the reporting party in the use of the translation software.

- The software should provide the facility to maintain a profile of each party that identifies the name, Duns Number, organizational identifier, phone numbers, and segments in a required transaction set.

- The software should have automated data-mapping procedures embedded in the EDI translation software that creates fixed-length files according to the user's requirements for subsequent translation to an EDI format. The reverse process should also be provided.

- The EDI software package must support the current release of an EDI standard.

SECTION 4 - MAINTENANCE

4.1 Maintaining Guideline

Maintenance of this guideline is the responsibility of the United States Environmental Protection Agency, Office of Mobile Sources (OMS), **Fuels & Energy Division (FED). FED is the successor division to the Field Operations & Support Division (FOSD), which was eliminated in a r ecent EPA reorganization. For purposes of this guidance and for the Terms & Conditions Memorandum, the r eferences to "FOSD" are synonymous with "FED."** All reporting parties will be notified of changes affecting existing conventions.

For additional information, contact:

Office of Mobile Sources (OMS)
Fuels & Energy Division (FED)
U. S. Environmental Protection Agency
Mail Code 6406J
Washington, DC 20460
(202) 233-9010 FAX: (202)233-9557
Internet address: REFGAS@EPAMAIL.EPA.GOV

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SECTION 5 - COMMUNICATIONS

REFGAS uses the **AT&T** VAN which uses the Set-up Form on the following page to establish new Reporting Party profiles. The indicated information must be provided by the Reporting Party to EPA for all new accounts.

Please complete the following information and FAX to ***U.S. EPA, Attention: REFGAS*** *at (202) 233-9557 or (202) 233-9556.*

YOUR COMPANY INFORMATION **DATE _____**

Company Name:

_____

Up to 20 bytes long.

Your Name/Company Contact _____

Your/Company Contact's Phone Number _____

EDI ID _____
Any valid ASC.x12 i.d. 1 to 15 bytes long.

EDI ID QUALIFIER _____
Any valid ASC.x12 i.d. qualifier. 2 bytes long.

VAN_____
Any length.

Network interconnects are a viable means of exchanging data when each Reporting Party wishes to use their preferred VAN. It is the responsibility of each party to research whether their preferred VAN has the full complement of desired interconnect capabilities with the **AT&T** VAN.

The following information is normally required to establish an interconnect.

/ INTERCONNECTION CHECKLIST

Company Checklist	**EPA REFGAS (Your Trading Partner)**
Network Company Uses	_____
Company Sender/ Receiver ID	_____
Company ID Qualifier	_____
Company Contact Name	_____
Contact Phone Number	(___)_____
Alternate Company Contact Name	_____
Alternate Phone Number	(___)_____
Company	_____ **Address 1** _____ **Address 2** _____ **City** _____ **State** **ZIP**

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SECTION 6 - MISCELLANEOUS

6.1 Industry Business Models

REFGAS has implemented the following ASC X12 transaction sets. Selection of a transaction set was based on the specific business issue to be solved and the defined purpose of the transaction set. It is the intention of EPA to use national standards where they exist and to avoid developing specific purpose transaction sets.

863 Report of Test Results is used to receive information about the chemical composition of reformulated gasoline produced, blended, or imported into the country. Reporting is by individual batches and by annual submissions of summary information.

867 Product Transfer and Resale is used to report information about the transfer of oxygen and benzene credits between refiners, and to report areas of the country into which certain products are sold.

997 Functional Acknowledgment is used to communicate to the originating party that a message was received, and to indicate the results of the syntactical analyses of the electronically encoded documents. The 997 is returned for all successfully transmitted documents as well as for rejected documents. The 997 does not guarantee the validity of the data submitted in a message; it only acknowledges receipt of the transmission and syntactical correctness of the messages.

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SECTION 7 - GLOSSARY OF TERMS

Actual Total Content
The result of multiplying the volume of gasoline produced by the level of attainment to an applicable standard.

ANSI
American National Standards Institute.

ANSI Standard
A document published by ANSI that has been approved through the consensus process of public announcement and review. ANSI Standards are developed by committees accredited by ANSI (see ASC) and must be revisited by the developing committee within five years for updating.

API
American Petroleum Institute.

API Gravity
American Petroleum Institute Gravity. An arbitrary scale developed by the American Petroleum Institute as a measure of relative density. The API gravity of a liquid is calculated from the formula:

$$API\ gravity\ (°) = \frac{141.5}{sp\ gr\ 60/60\ °F} - 131.5$$

where specific gravity (sp gr) is the ratio of the mass of a given volume of liquid to that of an equal volume of water at the same temperature, usually 60 EF (15.6 EC).

Application Acknowledgment
A transaction set that returns a response to a Trading Partner, indicating that a specific type of transaction has been received and processed in an application program. For example, the Purchase Order Acknowledgment transaction set 855 is used to acknowledge the receipt of a Purchase Order, transaction set 850. The Application Acknowledgement may provide additional information, such as whether the receiver can fulfill the order on time.

Area, Transaction Set
Identifies a defined area within a transaction set containing segments. The areas may be referred to as Table 1, Table 2, Table 3 or Header, Detail and Summary.

ASC X12
Accredited Standards Committee X12 of the ANSI. The committee's purpose is to develop uniform standards for electronic interchange of business documents. Membership is open to virtually all organizations and individuals with a material interest in the standards.

Authentication
A mechanism that enables the recipient of electronic data to verify the identity of the sender with certainty. This is done through the use of an electronic "key" or algorithm, which is shared by the trading partners. This is sometimes referred to as an electronic signature.

Batch
A quantity of gasoline.

Batch ID Number
An identifier assigned to a batch of gasoline in the format CCCCFFFFFYYNNNNNN, where CCCC identifies the Company, FFFFF the Facility, YY the year and NNNNNN is a sequential number.

Complex Model
A set of equations used to predict a fuel's performance based on parametric inputs. The Complex Model may be used from 1995 through 1997 and must be used after 1997 in the REFGAS program.

Compliance Checking
A checking process that is used to ensure that a message complies with ASC X12 syntax rules.

Compliance Method
A model to determine a gasoline's compliance with the applicable standard.

Compliance Total
Compliance Total Content minus the Actual Total Content. A value greater (>) than or equal (=) to zero (0) indicates compliance. For Oxygen and Benzene Averaging, a positive value indicates credits have been generated; if less than (<) zero there is a credit deficit.

Compliance Total Content
The result of multiplying a volume of gasoline by the applicable standard.

Component Data Element
A data element used as a sub-element in a Composite Data Structure.

Component Data Element Separator
Sometimes referred to as a sub-element separator, this is a unique character that precedes each Component Data Element in a Composite Data Structure. It is specified by the sender in the Interchange Control Header (ISA). The separator has a range of influence from this header to the next Interchange Control Trailer (IEA) segment. *The sub-element must be different from the data element separator and segment terminator* and once specified in the ISA segment must not appear in a data element value with the exception of its possible appearance in Data Element #785, Binary Data. Within diagrams, the colon (:) is used to represent the separator character.

Composite Data Structure
A structure that consists of two or more logically related component data elements in a defined sequence and delimited by a Component Data Element Separator.

Condition Designator
An indicator assigned to each data element in a segment that defines how it is to be used in the segment. Data elements may be designated as Mandatory (M), Optional (O) or Relational (X). Refer to the ASC X12 Standards, X Segment Directory, Introduction.

Control Segment
A control segment has the same structure as a data segment but is used for transferring control information for grouping data segments. Control Segments are Loop Control Segments (L/LE), Transaction Set Control Segments (ST/SE), and Functional Group Control Segments (GS/GE), defined in X12.6 and Interchange Control Segments (ISA/IEA,TA1) defined in X12.5.

Control Validation
Confirmation that information within the control segments is correct.

Conventions
Common practices and/or interpretations of the use of the ASC X12 standards, complying with the standards, as agreed upon by two or more trading partners. Conventions define what is included in a specific technical version of an ASC X12 standard.

Credits
A unit used to identify a surplus or deficit in compliance with the applicable standard.

Data Element
The smallest unit of information in the X12 standards. Data elements are defined in the Data Element Dictionary, X12.3. Each data element is identified by a reference number.

Data Element Dictionary
Source document for Data Element specifications. It's official name is X12.3 Data Element Dictionary. The dictionary specifies the name, description, and minimum/maximum length for each data element. For ID-type or code type data elements, the dictionary lists all code values and their definitions, or indicates in an appendix where the valid code list can be obtained.

Data Element Length
Number of character positions available to represent the data element value. A data element may be of variable length with range from minimum to maximum, or it may be of fixed length in which the minimum is equal to the maximum.

Data Element Reference Number

Reference number assigned to each data element as a unique identifier. Numbers prefixed with a "C" or an "S" indicate a Composite Data Element. Lack of a prefix indicates a Simple Data Element.

Data Element Separator
A unique character preceding each data element that is used to delimit data elements within a segment. The value of the separator is specified by the sender in the Interchange Control Header (ISA). The separator has a range of influence from this header to the next Interchange Control Trailer (IEA) segment. *The data element separator must be different from the component or sub-element data separator, and segment terminator.* Once specified in the ISA segment, the Data Element Separator may not appear in a data element value with the exception of Data Element #785, Binary Data. Within diagrams, the asterisk (*) is used to represent the separator character. See "Delimiters".

Data Element Type
An identifier in the data element which describes the format of the datat. A data element may contain data that is one of eight types: Numeric (N), Decimal (R), Identifier (ID), String (AN), Date (DT), Time (TM), Binary (B), or Fixed Length String (FS). Refer to X12.3 Data Element Dictionary, Introduction.

Delimiters
Delimiters are bit configurations that are used as data element separators, component or sub-element separators and segment terminators. The design of X12 is based on the concept of variable length fields. Delimiters are necessary to identify the start of data elements and sub-elements and to identify the end of segments. They are specified by the sender in the Interchange Control Header (ISA). They have a range of influence from a header to the next Interchange Control Trailer (IEA) segment. Delimiters are agreed upon by the Trading Partners. The value of the terminator must be different from the value of the data element separator which must be different from the component (sub-element) element separator. Once specified in the ISA segment, delimeter values may not appear in a data element value with the exception of its possible appearance in Data Element #785, Binary Data.

Direct Transmission
The exchange of data from the computer of the sending party directly to the computer of the receiving party.

DISA
Data Interchange Standards Association. A not-for-profit organization which serves as the Secretariat for ASC X12 and the Pan American EDIFACT Board (PAEB). It is accredited by ANSI to administer the U.S. Technical Advisory Group on matters pertaining to EDIFACT syntax before the International Organization for Standardization's (ISO's) Technical Committee 154.

Draft Standard for Trial Use (DSTU)

A document approved by the full ASC X12 committee following membership consensus and subsequent resolution of negative votes and approved for publication by the Procedures Review Board. DSTU's must be submitted to ANSI periodically for approval as National Standards. See ANSI Standard.

E200
Equals 200 degrees F distillation fraction of the target fuel in terms of volume percent.

EBCDIC
Extended Binary Coded Decimal Interchange Code is a coding scheme used for storage of alphabetic, numeric or special characters that requires no arithmetic processing. Each character has a unique bit pattern assigned to represent it and takes one byte of storage.

EDI
The abbreviation for Electronic Data Interchange, which is commonly defined as "the computer-to-computer exchange of business information in a standard format." An EDI transmission is a highly structured message intended for automated processing by a computer. All references to EDI under U.S. EPA programs refers to the utilization of ASC X12 standards.

EDI Translation
The conversion of application data to and from the X12 standard format.

EDI Translator
Computer software used to perform the conversion of application data to and from the X12 standard format.

Electronic Data Interchange (EDI)
The computer application to computer application exchange of business information in a standard format. An EDI transmission is a highly structured message intended for automated processing by a computer. All references to EDI under U.S. EPA programs refers to the utilization of ASC X12 standards.

Electronic Envelope
Electronic package that contains a set(s) of documents sent from one sender to one receiver. See Interchange Control Segments.

Electronic Mailbox
A repository where an EDI transmission is stored for pickup or delivery. Mailboxes may be within a third-party service provider's system or in an individual trading partner's domain.

Encryption
A process of transforming clear text (data in its original, uncoded form) into ciphertext (encrypted output of a cryptographic algorithm) for security or privacy.

EPA
The Environmental Protection Agency. Also called USEPA for United States Environmental Protection Agency. Established in 1970 by Presidential executive order, it brings together parts of various government agencies involved with the control of pollution. Note that some State environmental authorities may be called EPA also, as in Illinois EPA.

ETBE
Ethyl t-Butyl Ether

ETHANOL
An alcohol component in gasoline.

Exhaust Benzene Emissions
Benzene emissions from the exhaust system.

FED
Fuels and Energy Division. Successor division to FOSD. As of September 1995, references to "FOSD" in this technical guidance and in the Terms & Conditions Memorandum should be considered synonymous with "FED."

FOSD
Field Operations and Support Division. **In September 1995, as the result of an EPA reorganization, FOSD was elminiated and the REFGAS functions of FOSD were transferred to its successor division, FED. See "FED," above.**

FIPS PUB 161
Federal Information Processing Standard, Publication 161.

Functional Acknowledgment
A transaction set (997) transmitted by the receiver of an EDI transmission to the sender, indicating receipt and syntactical acceptability of data transmitted according to the ASC X12 standards. The functional acknowledgment allows the receiving party to report back to the sending party problems encountered by the syntax analyzer as the data is interpreted. It is not intended to serve as an acknowledgment of data validity.

Functional Group
A group of one or more transaction sets enclosed by a Functional Group Header (GS) segment and a Functional Group Trailer (GE) segment. Each instance of a functional group applies to a specific business function defined by the specific application to which it applies.

Functional Group Envelope
The envelope starting with a GS (Functional Group Header) Element and terminated with a GE (Functional Group Trailer) Element.

Gasoline - Conventional

Gasoline that has not been certified under CFR 80.40.

Gasoline - Conventional Blendstock

Gasoline - Reformulated
Any gasoline whose formulation has been certified under CFR 80.40, which meets each of the standards and requirements prescribed under CFR 80.4.

Hexadecimal
Base 16 notation commonly used to represent binary values.

Technical Guideline
A document prepared by an industry group, association, institute, government body or individual trading partner that defines how the ASC X12 standards are used by that industry.

Industry Conventions
A document prepared by an industry group, association, institute, etc. that defines how the ASC X12 standards are used by that industry.

Interchange
The level in the ASC X12 design hierarchy that includes the entire data stream, from the outer (interchange control) envelope to the data elements. An interchange is bounded by Interchange Control Segments (ISA/IEA). Also known as a Message.

Interchange Control Envelope
The outer envelope that holds multiple functional group envelopes in an ASC X12 interchange, or message.

Interchange Control Segments
Segments that identify the boundaries of the ASC X12 formats in an EDI message. Interchange Control Header (ISA) and Interchange Control Trailer (IEA) segments bound a unique interchange being sent from one sender to one receiver.

Interchange Control Structure
The Interchange Control Header (ISA) and Interchange Control Trailer (IEA) segments form an envelope for one or more functional groups or interchange-related control segments, and perform the following functions: 1) define the data element separators and the data segment terminators, 2) identify the sender and receiver, 3) provide control information for the interchange, and 4) may carry authorization and security information (X12.5).

Level
A term used to identify hierarchical positions in an ASC X12 design. The levels used from highest to lowest are Communications, EDI Interchange (message), Functional Group, Transaction Set, Heading Area, Summary Area and Detail Area. Reference ASC X12 publication DSTU X12.59 Technical of EDI Structures - Semantic Impact.

Loop
A group of segments related only by design of the transaction set. Use of any segment within a loop requires the use of the first or parent segment of the loop.

Mandatory (M)
A data element/segment requirement designator that indicates that the presence of a specified data element is required.

Mapping
The process of identifying the relationship between the data elements in the standard transaction set and the data elements in the application.

Max Use
The maximum number of times a segment can be used at a location in a transaction set.

Message
Entire data stream including the outer envelope. Also known as the EDI interchange.

MTBE
Methyl t-Butyl Ether

Net Compliance Total
The net difference between the Credit Surplus or Deficit and the Credits Transferred or Obtained.

NOx Emissions Performance
Difference in exhaust NOx emissions attributed to a gasoline formulation as compared to the 1990 baseline gasoline.

NPRA
National Petroleum Refiners Association.

Olefins
Hydrocarbons containing double bonds.

OMS
Office of Mobile Sources, U.S. Environmental Protection Agency.

Optional (O)
A data element/segment requirement designator that indicates that the presence of a specified data element/segment is at the option of the sending party. Usage of these fields can be based on the mutual agreement of the interchange parties.

OPRG

Oxygenated Fuels Program Reformulated Gasoline.

Oxygenate
Any substance used lawfully which, when added to gasoline, increases the oxygen content of the gasoline.

PADD
Petroleum Administration for Defense District. A grouping of the continental states, excluding Alaska but including District of Columbia, into five areas designated I, II, III, IV and V. Used to identify the area in which an importing facility is located.

PIDX
Petroleum Industry Data Exchange.

PMAA
Petroleum Marketers Association of America.

Program
Identification as to whether the gasoline was produced for the Winter Oxygenate Fuels Program.

Proprietary Format
A data format specific to a company, industry, or other limited group. Proprietary formats may not comply with the ASC X12 series of standards.

Qualifier
A data element that identifies or defines a related element. Qualifier elements are ID Type Elements. The qualifier is a code taken from a list of approved codes.

RBOB
See GASOLINE - REFORMULATED GASOLINE BLENDSTOCK FOR OXYGENATE BLENDING.

REFGAS
Reformulated Gasoline and Anti-Dumping Program.

Reporting Party
The party required to submit reports to EPA under the RFG and Anti-Dumping Provisions at 80.75 and 80.105. This party is sometimes referred to as "the party". EPA and/or the reporting party are sometimes referred to as "Trading Partners".

RVP
Reid Vapor Pressure. Used to measure the propensity of gasoline to evaporate.

Repeating Segment

A segment that may be used more than once at a given location in a transaction set. See Max Use.

Security Controls
System mechanisms that deny access to unauthorized users and protect data from unauthorized uses.

Segment
Variable length set of logically related data elements in a defined sequence. A segment contains a unique segment identifier (which is not a data element), one or more data elements, each preceded by a data element separator, and a segment terminator. Refer to Segment Directory.

Segment Directory
The document that provides the definitions and specifications of the segments used in the construction of transaction sets developed by ASC X12. The directory lists each segment by name, purpose, and identifier; details the standard data elements in the specified order; and specifies the requirement designator for each data element.

Segment Identifier
A unique identifier for a segment composed of a combination of two or three letters or digits. The segment identifier occupies the first character positions of the segment. The segment identifier is not a data element.

Segment Terminator
A unique character appearing at the end of a segment to indicate the termination of the segment. It is specified by the sender in the Interchange Control Header (ISA). The segment terminator has a range of influence from this header to the next Interchange Control Trailer (IEA) segment. The segment terminator must be different from the data element and sub-element separators. Once specified in an ISA segment, a segment terminator character must not appear in a data element value (with the exception of Data Element #785, Binary Data). Within diagrams, the notation "N/L" is used to represent instances where data matches the segment terminator.

Simple Model
A set of equations used to predict a fuel's performance based on parametric inputs. The Simple Model is valid only from 1995 through 1997.

Standards
Standards are the technical documentation approved by ASC X12, including Transaction Sets, Segments, Data Elements, Codes and Interchange Control Structures.

Sub-Element Separator

Sometimes referred to as a *Component Data Element Separator*, the sub-element separator is a unique character that precedes each Component Data Element in a Composite Data Structure. It is specified by the sender in the Interchange Control Header (ISA). The separator has a range of influence from this header to the next Interchange Control Trailer (IEA) segment. *The sub-element separator must be different from the data element separator and segment terminator.* Once specified in the ISA segment, a sub-element separator may not appear in a data element value (with the exception of Data Element #785, Binary Data). Within diagrams, the colon (:) is used to represent the separator character.

Syntax
The grammar or rules that define the structure of the EDI standards (i.e., the use of loops, qualifier, etc.). Syntax rules are published in ANSI X12.6.

T50
Temperature at which 50% of a mixture being distilled has evaporated.

T90
Temperature at which 90% of a mixture being distilled has evaporated.

TAME
t-Amyl Methyl Ether.

Toxic Emissions Performance
Difference in exhaust toxic emissions attributed to a gasoline formulation as compared to the 1990 baseline gasoline.

Trading Partner
See "reporting party".

Transaction Set
The transaction set unambiguously defines, in the standard syntax, information of business or strategic significance and consists of a transaction set header segment, one or more data segments in a specified order, and a transaction set trailer segment.

Transaction Set ID
An identifier that uniquely identifies the transaction set. This identifier is the first data element of the transaction set header segment.

Translation
The act of accepting documents in other than X12 standard format and converting them to the X12 standard format.

Transmission Control
Defines how information is transmitted across communications lines and includes routing and *recommendations*.

UNCID
Uniform Rules of Conduct For Interchange of Trade Data by Teletransmission.

VAN
Value Added Network. Third-party service organizations.

Version/Release
Identifies the publication of the standard being used for the generation or the interpretation of data in the X12 standard format. May be found in the Functional Group Header Segment (GS) and in the Interchange Control Header Segment (ISA). (E.g., Version 003040 means Version 3 Release 4.) See Control Segment.

VOC
Volatile Organic Compounds.

VOC - Controlled
Summer Volatility Control Program, from 6/1 through 9/15 which limits the volatility of gasoline.

VOC - Control - Region 1
Southern section of the United States where certain volatility standards are applicable.

VOC -Control - Region 2
Northern section of the United States where certain volatility standards are applicable.

VOC - Not Controlled
Time period outside the 6/1 through 9/15 period when the Summer Volatility Program is not in effect.

VOC Emissions Performance
Difference in exhaust VOC emissions attributed to a gasoline formulation as compared to the 1990 baseline gasoline.

X12
The ANSI committee responsible for the development and maintenance of standards for Electronic Data Interchange (EDI).

X12.5
The ANSI ASC X12.5 standard that defines the Interchange Control Structures. This standard defines the control structures, the interchange envelope of a header (ISA) and trailer (IEA) for the electronic interchange through a data transmission, and it provides a structure to acknowledge the receipt and processing of this envelope.

X12.6

The ANSI ASC X12.6 standard defines the Application Control Structure. This standard defines the structure of business transactions for computer-to-computer interchange.

SECTION 8 - FORMS AND DOCUMENTS

8.1 ASC X12 Transactions

The Reformulated Gasoline and Anti-dumping Program (REFGAS) EDI Project complies with the ASC X12 standards for Electronic Data Interchange. The REFGAS process supports the following ASC X12 standards at this time:

- ISA/IEA, GS/GE, ST/SE Header and Trailer Formats;
- 863 Report of Test Results (X12.41);
- ~~867 Product Transfer and Resale Report (X12.33)~~ *(to be implemented at a later date)*; and
- 997 Functional Acknowledgment (X12.20).

8.1.1 Header/Trailer Format

The EPA has defined the elements to be used in the following segments for all messages:

ISA/IEA	Interchange Control Header/Trailer
GS/GE	Functional Group Control Header/Trailer
ST/SE	Transaction Set Header/Trailer

The interchange header and trailer segments envelope one or more functional groups or interchange related control segments and perform the following functions:

- Define the data element separators and data segment terminators;
- Identify the sender and receiver;
- Provide control information for the interchange; and
- Allow for authorization and security information.

8.1.2 863: Report of Test Results Transaction Set

The 863 Report of Test Results transaction set is used to exchange the following Reports:

- Batch Report *(Refer to Appendix A)*
- RVP Averaging Report *(Refer to Appendix B*)*
- VOC Emissions Performance Averaging Report *(Refer to Appendix C*)*
- Sulfur, Olefins, and T90 Averaging Report *(Refer to Appendix D*)*

- NOx Emissions Performance Averaging Report *(Refer to Appendix E*)*
- Toxic Emissions Performance Averaging Report *(Refer to Appendix F*)*
- Benzene Content Averaging Report *(Refer to Appendix G*)*
- Oxygen Content Averaging Report *(Refer to Appendix H*)*
- Anti Dumping Gasoline Program Annual Report *(Refer to Appendix L*)*

*[*Note: Appendix A is attached. The reports that are mapped in the other appendices are not currently being accepted by EPA via EDI. The other appendices are currently on the OAQPS TTNBBS in file EDIMAPS.ZIP. No changes are foreseen in the other appendices at this time.]*

The receipt of the 863 Report of Test Results is acknowledged with a 997 Functional Acknowledgement.

8.1.3 867: Product Transfer and Resale Report Transaction Set

The 867 Product Transfer and Resale Report transaction set is used to exchange the following Reports:

- Credit Transfer Summary Report *(Refer to Appendix J*)*
- Averaging Areas Report *(Refer to Appendix K*)*

*[*Note: These reports are not currently accepted by EPA via EDI.]*

The receipt of the 867Product Transfer and Resale is acknowledged with a 997 Functional Acknowledgment

8.1.4 997: Functional Acknowledgment Form

A 997 Functional Acknowledgment is sent by REFGAS to the Reporting Party in response to the receipt of the received transactions. It acknowledges only the receipt and syntactical readability of the received transaction.

8.2 ASC X12 Documents

The following ASC X12 documents should be referenced for additional information standard format and technical issues.

ASC X12 Draft Standards
Version 003 Release 050
Document Number ASC X12S/90-856

These documents are available through:

Data Interchange Standards Association, Inc. (DISA)
1800 Diagonal Road, Suite 200

Alexandria, VA 22314-2852
Phone: (703) 548-7005
FAX: (703) 548-5738

or:

EDI Support Services, Inc.
P.O. Box 203
Chardon, OH 44024-0203
Phone: (800) 334-4912

8.3 EPA REFGAS Code Lists

8.3.1 Controlled Code Lists 1-9

EPA CODE LIST ID	NAME	CONTENT
1	IDENTIFICATIONS, N103, DE 66 = EP	N104, DE 67, ID Code NNNN - Company (Min 4, Max 4) FFFFF - Facility (Min 5, Max 5)
2	PIN, REF01, DE 128 = 4A	REF02, DE 127, (Min 4, Max 4) NNNN - Company ANNN - Submitter
3	PRODUCT, PID02, DE 750 = 08	PID04, DE 751, Product Description Code (Min 2, Max 2) CB - Conventional Blendstock CG - Conventional Gasoline GT - GTAB - Gasoline Treated as Blendstock RX - RBOB - Total All Types (See Anti-dump & Oxy. Avg. Rpts.) RO - RBOB - Any Oxygenate RR - RBOB - Any Renewable Oxygenate RE - RBOB - Ethers Only RN - RBOB - Non-VOC Controlled Renewable Ether Only RS - RBOB - Refiner Specified RT - RBOB - Renewable Ether Only RG - Reformulated Gasoline
4	GRADE, PID 02, DE 750 = 38	PID04, DE 751, Product Description Code (Min 2, Max 2) RG - Regular MG - Mid-Grade PR - Premium
5	PROGRAM, PID02, DE 750 = PG	PID04, DE 751, Product Description Code (Min 2, Max 2) OP - Oxygen Program (OPRG) NP - non-Oxygen Program (non-OPRG)
6	VOC CONTROL, PID02, DE 750 = VC	PID04, DE 751, Product Description Code (Min 2, Max 2) V1 - VOC - Control Region 1 V2 - VOC - Control Region 2 VN - Not VOC Controlled VC - VOC Controlled
7	COMPLIANCE METHOD, PID02, DE 750 = DM	PID04, DE 751, Product Description Code (Min 1, Max 2) **AS-Alternative Simple Model** C - Complex Model S - Simple Model
8	SUB PRODUCT, PID02, DE 750 = 09	PID04, DE 751, Product Description Code (Min 2, Max 2) IR - Included in Ratio Calculations XR - Excluded from Ratio Calculations IC - Included in Compliance Calculations
9	AREA IDENTIFICATION, N103, DE 66 = EP	N104, DE 67, Area Identification (Min 3, Max 3)

8.3.2 Code List 10 - RFG Covered Program Areas

CODE	RFG COVERED PROGRAM AREAS
	"Required" Areas
001	Los Angeles - Anaheim - Riverside, CA
002	San Diego County, CA
003	Greater Connecticut
004	New York - Northern New Jersey - Long Island - Connecticut area
005	Philadelphia - Wilmington - Trenton - Cecil County, MD area
006	Chicago - Gary - Lake County, IL - Indiana - Wisconsin area
007	Baltimore, MD
008	Houston - Galveston - Brazoria, TX
009	Milwaukee - Racine, WI
	"Opt-in" Areas
021	Sussex County, DE
022	Washington, DC
023	Cincinnati - Hamilton, OH* *Ohio counties have not opted-in.
024	Louisville, KY
025	Hancock and Waldo Counties, ME
026	Knox and Lincoln Counties, ME
027	Lewiston - Auburn, ME
028	Portland, ME
029	Queen Anne's and Kent Counties, MD
030	Springfield, MA
031	Boston - Lawrence - Worcester (E. MA)
032	Manchester, NH
033	Portsmouth - Dover - Rochester, NH
034	Allentown, PA - Bethlehem, PA - Easton, PA
035	Atlantic City, NJ
036	Albany - Schenectady - Troy
037	Buffalo - Niagara Falls
038	Poughkeepsie, NY
039	The portion of Essex County, NY,
040	Jefferson County, NY
041	Altoona, PA
042	Erie, PA
043	Harrisburg - Lebanon - Carlisle, PA
044	Johnstown, PA
045	Lancaster, PA
046	Pittsburgh - Beaver Valley
047	Reading, PA
048	Scranton - Wilkes-Barre, PA
049	York, PA
050	Youngstown, OH - Warren, OH - Sharon, PA* * Ohio counties have not opted-in.
051	The entire state of Rhode Island
052	Dallas - Fort Worth
053	Richmond - Petersburg, VA
054	Norfolk - Virginia Beach - Newport News

CODE	RFG COVERED PROGRAM AREAS
055	Sheboygan, WI
056	Kewaunee County, WI
057	Manitowic County, WI

8.3.3 Code List 11 - REFGAS Product Type Code

CODE	COMPLIANCE MODEL	VOC CONTROL	PROGRAM	PRODUCT DESCRIPTION
S1	Simple	VOC	OPRG	RBOB
S2	Simple	VOC	OPRG	AVG'D RFG
S3	Simple	VOC	non-OPRG	RBOB
S4	Simple	VOC	non-OPRG	AVG'D RFG
S5	Simple	non-VOC	OPRG	RBOB
S6	Simple	non-VOC	OPRG	AVG'D RFG
S7	Simple	non-VOC	non-OPRG	RBOB
S	Simple	non-VOC	non-OPRG	AVG'D RFG
C1	Complex	N/A	OPRG	RBOB Volume.
C2	Complex	N/A	OPRG	AVG'D RFG
C3	Complex	N/A	non-OPRG	RBOB
C4	Complex	N/A	non-OPRG	AVG'D RFG
T1	Simple	VOC	N/A	VOC Controlled Reformulated Gasoline Valid only when Simple Model is used for compliance determination.
T2	Simple or Complex	N/A	non-OPRG	All non-OPRG Reformulated Gasoline.
T3	Simple or Complex	N/A	N/A	All Reformulated Gasoline

8.4 FORMS AND REPORTS

Summary of Reports

REPORT NAME	APPENDIX	REGULATORY DEADLINES			
		1ST QTR DUE MAY 31	2ND QTR DUE AUG. 31	3RD QTR DUE NOV. 30	4TH QTR DUE LAST DAY OF FEBRUARY
Batch Report	A	/	/	/	/*
RVP Averaging Report	B			/	
VOC Emission Performance Averaging Report (complex model Only)	C			/	
Sulfur, Olefins, and T90 Averaging Report	D				/
NOX Emission Performance Averaging Report (complex model Only)	E				/
Toxic Emission Performance Averaging Report	F				/
Benzene Content Averaging Report	G				/
Oxygen Content Averaging Report	H				/
Renewable Oxygen Content Averaging Report	I				/
Credit Transfer Summary Report	J				/
Averaging Areas Report	K				/
Anti Dumping Report	L				/

* For conventional gasoline refiners and importers, batch reports are due at the end of the 4th quarter for the entire year.

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SECTION 9 - AGENCY CONVENTIONS, INTERCHANGE CONTROL STRUCTURES & TRANSACTION SETS

9.1 Introduction

The ANSI ASC X12 conventions for Electronic Data Interchange exchange of REFGAS transactions with the U.S. Environmental Protection Agency (EPA) are documented in this Section.

Section 9 describes the information used in the Interchange Header (ISA), Interchange Trailer (IEA), Group Start (GS), Group End (GE), and the control segments. The 997, Functional Acknowledgement, is also described by presenting segments to be used. Finally, the Section provides details of each segment on individual pages, including details of the data elements and any codes or qualifiers that are required.

To help understand how the standards work, it is essential to clarify the terminology and syntax used, and to explain some of the components that make electronic communications possible.

A "*transaction set*" is a standards-based, electronic translation of what, in business, can be thought of as a single, common business document that is to be exchanged between two trading partners. Examples include the purchase order, invoice, and shipping notice. The data included in a transaction set conveys the same information as a conventional printed document. EDI transaction sets are generally created from information extracted from internal information systems, translated into ASC X12 format and punctuated with control characters.

In ANSI ASC X12 syntax, a transaction set consists of three areas - the *Header* or Table 1, the *Detail* or Table 2, and a *Summary* or Table 3. The *Header Area* contains information that is of an administrative nature and pertains to the entire document (document dates, identities, names of contacts, etc.). The *Detail Area* is used to convey the actual business information, and may include such information as quantity, price, and item number. Data in the Detail Area overrides equivalent Header Area data (i.e. if a contact is specified in the Header and another contact is specified with a single item, the second contact takes priority). The *Summary Area* contains control information and may contain additional data, including totals, that relate to the entire transaction.

The Header, Detail, and Summary Areas are composed of a series of *segments*. A segment is a logical grouping of data. A segment contains *data elements*. A data element is the smallest discrete piece of data in the ASC X12 syntax. Please note that in the design of Composite Data Elements, sub-elements are still referred to as elements.

In the ASC X12 syntax, each data element is separated by an element separator and the last element is followed by a segment terminator. For an example, the data elements quantity, unit of measure, unit price, and catalogue number are typically found on a purchase order or invoice. Within an invoice transaction set, this data is conveyed in a segment of five data elements grouped in a specific sequence as follows:

IT1 Quantity*Unit of Measur e Code*Unit Price** Pr oduct Service Qualifier*Pr oduct/Service Identification N/L**

The element separators are graphically represented by the following notations:

Asterisk (*)	Element separator
N/L	Segment terminator
Colon (:)	Sub-element separator.

In an actual translation, the segment would appear as:

IT11*CA*1.08**CT*141 151 N/L**

In the ASC X12 code list, "CA" is the unit of measure code for case, and "CT" is the product identification qualifier for carton.

The following list defines terms associated with segments and provides references to codes and terms used in the X12 standard. The actual translation does not include all of the listed items as only the segment identifier characters, the values for each data element, the data element separators and the segment terminator characters are included.

Segment Identifier: Two or three characters used to identify the segment. The segment identifier occupies the first character positions of the segment.

Data Element Refer ence Number: A number assigned to a data element which provides a reference to the ASC X12 Data Dictionary specification associated with that data element.

Data Element Refer ence Designator: A structured code assigned to each data element in a segment to indicate its unique position in the segment. The data element reference designator is composed of the segment identifier and its sequential position within the segment.

Data Element Name: The name assigned to the data element in the ASC X12 Data Dictionary.

Attributes: Characteristics associated with the data element. Each data element has three ASC X12 attributes: usage or Condition Designator, Type, and Minimum/Maximum length.

Condition Designator

M - Mandatory
The element is required to appear in the segment.

O - Optional
Appearance of the data element is at the option of the sending party or is based on the mutual agreement of the trading partners.

X - Relational
Condition that may exist between two or more data elements based on the presence or absence of one of the data elements. Additional codes are used to identify the condition:

P - Paired or Multiple,
R - Required,
E - Exclusion,
C - Conditional, or
L - List Conditional.

Refer to the X12 Standards Manual, Introduction to X12.22 Segment Directory for more information.

Data Element Type

ID - Identifier
The data element must always contain a value from a predefined list of values that is maintained by X12 or by other bodies that are recognized by X12. The value is left justified. Trailing spaces should be suppressed.

AN - String
Alpha-numeric sequence of characters containing at least one non-space character. The significant characters must be left justified. Any leading spaces are assumed to be significant characters. Trailing spaces should be suppressed.

FS - Fixed Length String
A sequence of any letters, spaces, and/or special characters, filled with spaces, if necessary, to satisfy minimum length.

DT - Date
The format is YYMMDD where YY is the Year, MM is the month and DD is the day of the month.

TM - Time
Values for a time-type data element are in the HHMMSSd..d format expressed using the 24-hour clock. HH expresses the hour (00-23), MM expresses the minute (00-59), SS the seconds (00-59), and d..d is the numeric expression of decimal seconds.

Nn - Numeric
Numeric data element where N indicates a numeric and "n" indicates the decimal places to the right of a fixed, implied decimal point. The decimal point is not transmitted in the character stream. If the max length of the data element was five position and the Type was N2, the values sent would always have two decimal positions; an N0 would contain no decimal positions.

R - Decimal
A numeric data element where the decimal point is optional for integer values, but required for fractional values. Leading zeros should be suppressed unless necessary to satisfy a minimum length requirement. Decimal points and minus signs are not counted in the length of the data element value. If the max length of the data element was three positions, the following represent the values that could be sent: NNN, .NNN, N.NN, NN.N, -N.NN, etc.

B - Binary
Any sequence of octets ranging in value from binary 00000000 to binary 11111111. Binary data may only exist in the BIN Segment.

Minimum/Maximum: This is the range, minimum to maximum, of the number of character positions available to represent the data element value. It may be of variable length with a minimum to maximum, or it may be of fixed length in which the minimum is equal to the maximum.

9.2 X12 EDI Transmission Control Structure

9.2.1 Control Structure

An X12 Interchange, or message, is a hierarchical structure consisting of multiple transaction sets, and is bounded by an interchange control header and trailer. The

interchange structure allows transaction sets of different types to be transmitted in the same message, and the data is separated or segregated logically for easy interpretation and internal routing by the receiver.

The outermost structure of an EDI message is called the Interchange Envelope. The *interchange control structure* identifies the bounds of the interchange envelope. It consists of a Header (ISA) and a Trailer (IEA). The interchange control structure provides information which identifies the message as a whole, and this information is used to acknowledge the receipt and processing of the envelope. There are other segments available for Security and Interconnect control when using the services of third party communications providers (VANS).

Within an EDI interchange envelope are one or more functional groups. A functional group contains one or more transactions sets of the same type. A *functional group* structure is bounded by a GS (Group Start) and a GE (Group End) segment.

Within a functional group, multiple transaction sets of the same functional type are transmitted together. Each *transaction set* begins with an ST (Transaction Set Start) segment and ends with an SE (Transaction Set End) segment.

The interchange control envelope (ISA/IEA) contains one or more functional groups or interchange-related control segments and performs the following functions:

- Defines the segment terminator, and the element and sub-element separators,
- Identifies the sender and receiver,
- Provides control information for the interchange, and

Allows for authorization and security information.

The X12 standard also provides an interchange acknowledgment segment that can be used to acknowledge a message's Header and Trailer. It may be used to report the success of the syntactical analysis of the ISA/IEA. This is not the Functional Acknowledgment.

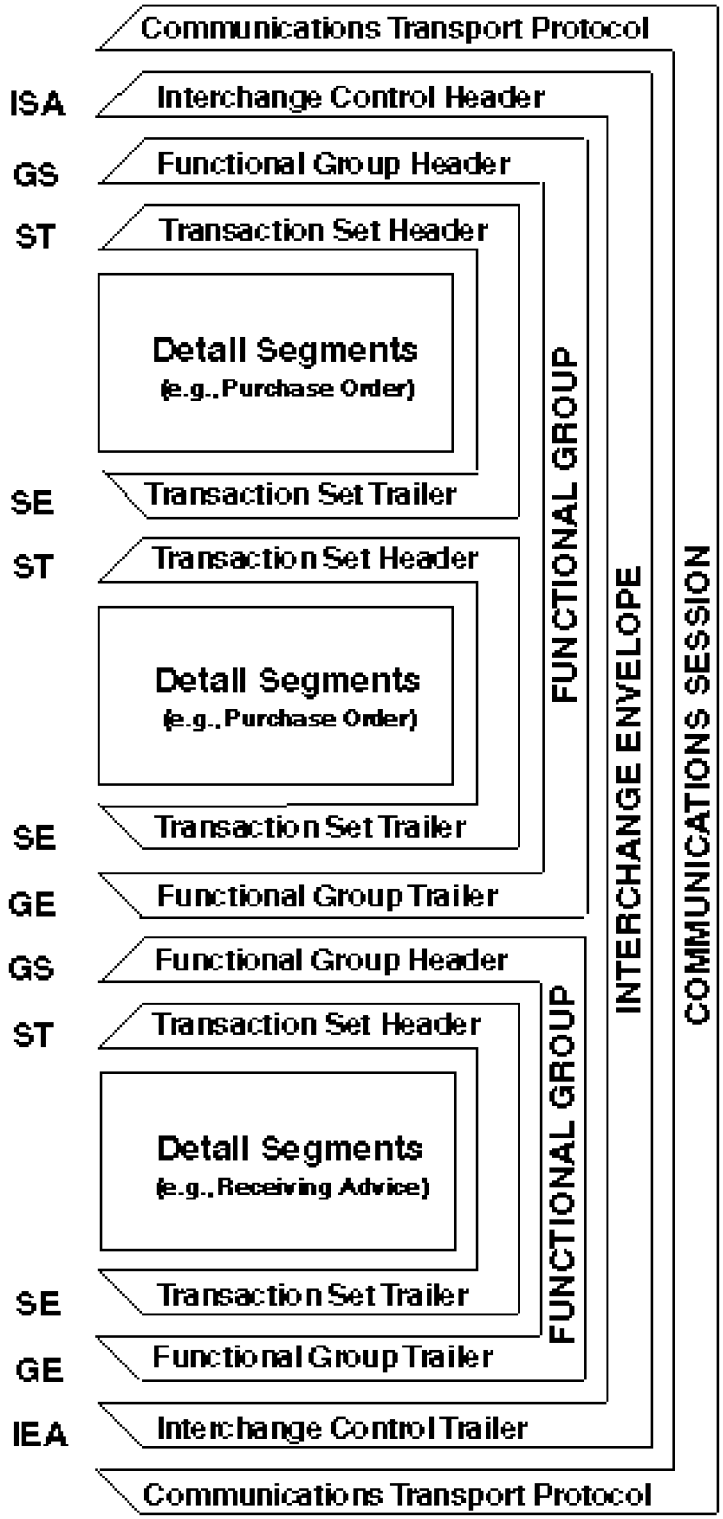
The GS/GE envelope contains transaction sets of the same type. Each type of transaction is contained in a separate functional group to allow the receiver to forward the information to the appropriate application. The GS segment identifies the Version and Release of the standard used to create the transactions in the group. Both the GS and the GE segments provide control information to ensure the validity of the interchange.

Translators normally strip off the ISA/IEA and GS/GE segments during translation. It is the responsibility of the trading partners to make provision to archive the messages before and after translation to satisfy EDI Audit Requirements.

The structures of the transaction set and functional group headers and trailers are found in the Segment Directory. The structures of the interchange control header and trailer are found in the Interchange Control Structure Standard (dpANS X12.5-1989).

The following EDI Transmission schematic illustrates a typical format for electronically transmitting a series of diverse business transactions.

Schematic of an EDI Transmission



EDI Transmission Structure

9.2.2 Control Segments

Segment: ISA Interchange Control Header

Purpose: To start and identify an interchange of one or more functional groups and interchange-related control segments.

Notes: The actual values of the data element separator, the sub-element separator, and the segment terminator for all the segments following this ISA (that starts this communication) through the IEA (that completes the message) are established in the ISA. Byte 4, following the three bytes that comprise the ISA (the identification of this header) is used to separate the remaining elements in this and all succeeding data elements through the end of the IEA. This technical guideline uses the asterisk (*) as the graphic representation of a data element separator.

The sub-element separator is established in ISA16, data element I15. The data element I15 is used as the sub-element separator until an IEA segment is encountered.This technical guideline uses the colon (:) as the graphic representation of a sub-element separator.

The value at the last position of the ISA establishes the segment terminator for the communication through the end of the IEA. The ISA consists of fixed length fields, therefore the segment terminator is byte 106 or the first byte after data element ISA16. This technical guideline uses the N/L as the graphic representation of a segment terminator.

The control characters selected as the segment separator, sub-element separators and the segment terminators must be characters that will not be data characters within the communication. Acceptable characters, in hexadecimal notation are HEX 04, HEX 0D, HEX 4F, HEX 1C OR HEX 15. Refer to the individual EPA technical guidelines for the appropriate control characters.

Example: ISA*00*XXXXXXXXXX*00*XXXXXXXXXX*01*873186902*940115*2300*U*00304*000000789*0*P*:N/L

Data Element Summary

Ref. Des.	Data Element	Name	Attributes
ISA01	I01	Authorization Information Qualifier	M, ID, 2/2
		Code to identify the type of information in the Authorization Information	
		00 No Authorization Information Present (No meaningful Information in I02	
		01 UCS Communications ID	
Ref. Des.	Data Element	Name	Attributes
		02 EDX Communications ID	
		03 Application Routing Information	
		04 Rail Communications ID	

ISA02	I02	Authorization Information	M, AN, 10/10
		Information used for additional identification or authorization of the sender or the data in the interchange. The type of information is set by the Authorization Information Qualifier.	
ISA03	I03	Security Information Qualifier	M, ID, 2/2
		Code to identify the type of information in the security Information 00 No Security Information Present (No Meaningful Information in l04) 01 Password	
ISA04	I04	Security Information	M, AN, 10/10
		This is used for identifying the security information about the sender or the data in the interchange. The type of information is set by the Security Information Qualifier.	
ISA05	I05	Interchange ID Qualifier	M, ID, 2/2
		Qualifier to designate the system/method of code structure used to designate the sender or receiver ID element being qualified. 01 Duns (Dun & Bradstreet)	
ISA06	I06	Interchange Sender ID	M, ID, 15/15
		Identification code published by the sender for other parties to use as the receiver ID to route data to them. The sender always codes this number in the sender ID element. Together with the Interchange Control Number in ISA13, it uniquely identifies the interchange data to the receiver.	
ISA07	I05	Interchange ID Qualifier	M, ID, 2/2
		Qualifier to designate the system/method of code structure used to designate the sender or receiver ID element being qualified. 01 Duns (Dun & Bradstreet)	

Ref. Des.	Data Element	Name	Attributes
ISA08	I07	Interchange Receiver ID	M, ID, 15/15
		Identification code published by the receiver of the data. When sending, it is used by the sender as their sending ID, thus other parties sending to them will use this as a receiving ID to route data to them. 873186902 U.S. EPA, REFGAS	
ISA09	I08	Interchange Date	M, DT, 6/6

Date of the interchange, in format of YYMMDD.

ISA10 I09 Interchange Time M, TM, 4/4

Time of the interchange, in format of HHMM.

ISA11 I10 Interchange Control Standards ID M, ID, 1/1

Code to identify the agency responsible for the control standard used by the message that is enclosed by the interchange header and trailer.

U U.S. EDI Community of ASC X12, TDCC, and UCS

ISA12 I11 Interchange Control Version Number M, ID, 5/5

This version number establishes the interchange control segment version and release. Refer to the individual EPA technical guidelines for the appropriate information. It does not establish the Version/Release for the transactions which follow. That Version/Release is established by the GS (Functional Group Header) preceding the transactions.

00304 Draft Standard for Trial Use Approved for Publication by ASC X12 Procedures Review Board Through October 1993.

ISA13 I12 Interchange Control Number M, NO, 9/9

This number uniquely identifies the interchange data to the sender. It is assigned by the sender. Together with the sender ID in ISA06 it uniquely identifies the interchange data to the receiver. It is suggested that the sender, receiver, and all third parties be able to maintain an audit trail of interchanges using this number. The number is suggested to start with 000000001 and be incremented by 1 for each subsequent ISA between the sender and receiver. It must match the number in IEA02.

Ref. Des.	Data Element	Name	Attributes
ISA14	I13	Acknowledgment Requested	M, ID, 1/1

Code sent by the sender to request an interchange acknowledgment.

0 No Acknowledgment Requested
1 Acknowledgment Requested

ISA15 I14 Test Indicator M, ID, 1/1

Code to indicate whether data enclosed by this interchange envelope is test or production.

P Production Data
T Test Data

ISA16 I15 Sub-element Separator M, AN, 1/1

Note: ISA16 is followed by a character that will establish the segment terminator for the balance of the communication, through the end of the IEA. Refer to the Notes at the start of this segment.

Segment: IEA Interchange Control Trailer

Purpose: To define the end of an interchange of one or more functional groups and interchange-related control segments.

Example: IEA*1*000000789 N/L

Data Element Summary

Ref. Des.	Data Element	Name	Attributes
IEA01	I16	Number of Included Functional Groups	M, N0, 1/5
		A count of the number of functional groups included in a message.	
IEA02	I12	Interchange Control Number	M, N0, 9/9
		This number uniquely identifies the interchange data to the sender. It is assigned by the sender. Together with the sender ID it uniquely identifies the interchange data to the receiver. It is suggested that the sender, receiver, and all third parties be able to maintain an audit trail of interchanges using this number. This number must agree with the number is ISA12.	

Segment: GS Functional Group Header

Purpose: To indicate the beginning of a functional group and to provide control information.

Syntax: 1 The data interchange control number (GS06) in this header must be identical to the same data element in the associated Functional Group Trailer (GE02).

Comments: A A functional group of related transaction sets, within the scope of X12 standards, consists of a collection of similar transaction sets enclosed by a functional group header and a functional group trailer.

Notes: The GS establishes the Version/Release for the transaction sets between it and the GE (Group End).

Example: GS*TR*123456789*873186902*940115*2300*1*X*003060 N/L

Data Element Summary

Ref. Des.	Data Element	Name	Attributes
GS01	479	Functional Identifier Code Code identifying a group of application related transaction sets. Listed below are examples. FA Functional Acknowledgement (997) PT Products Transfer and Resale (867) TR Test Results Notification (863)	M, ID, 2/2
GS02	142	Application Sender's Code Code identifying the party sending the message. Codes agreed to by trading partners. Like ISA06. Use DUNs Number.	M, AN, 2/15
GS03	124	Application Receiver's Code Code identifying the party receiving the message. Codes agreed to by trading partners. Like ISA08. Use DUNs Number.	M, AN, 2/15
GS04	29	Group Date Date sender generated a functional group of transaction sets. See ISA09.	M, DT, 6/6

Ref. Des.	Data Element	Name	Attributes
GS05	30	Group Time	M, TM, 4/4
		Time (HHMM) when the sender generated a functional group of transaction sets (local time at sender's location).	
GS06	28	Group Control Number	M, N0, 1/9
		Start with 1 and increment by 1 for each subsequent GS in the communication. Assigned number originated and maintained by the sender.	
GS07	455	Responsible Agency Code	M, ID, 1/2
		Code used in conjunction with Data Element 480 to identify the issuer of the standard. X Accredited Standards Committee X12	
GS08	480	Version/Release/Industry ID Code	M, ID, 1/12
		Code indicating the version, release, sub-release and industry (Agency) identifier of the EDI standard being used. Positions 1-3, version number; positions 4-5, release, and position 6, sub-release level of version; positions 7-12, industry, Agency or trade association identifier (optionally assigned by user). 003060 is the release used for REFGAS The version is “003". The release is “06" and the subrelease is “0".	

Segment: GE Functional Group Trailer

Purpose: To indicate the end of a functional group and to provide control information.

Syntax: 1 The data interchange control number (GE02) in this trailer must be identical to the same data element in the associated Functional Group Header (GS06).

Comments: A The use of identical data interchange control number in the associated Functional Group Header and Trailer is designed to maximize functional group integrity. The control number is the same as that used in the corresponding header.

Example: GE*9*1 N/L

Data Element Summary

Ref. Des.	Data Element	Name	Attributes
GE01	97	Number of Transaction Sets Included Total number of transaction sets included in the functional group terminated by the trailer containing this data element.	M, N0, 1/6
GE02	28	Group Control Number Assigned number originated and maintained by the sender. It must be identical to the number in the Group Header(GS06).	M, N0, 1/9

9.3 997 Functional Acknowledgement

9.3.1 Transaction Structure

997 Functional Acknowledgment

This Draft Standard for Trial Use contains the format and establishes the data contents of the Functional Acknowledgment Transaction Set (997) for use within the context of an Electronic Data Interchange (EDI) environment. The transaction set can be used to define the control structures for a set of acknowledgments to indicate the results of the syntactical analysis of the electronically encoded documents. The encoded documents are the transaction sets, which are grouped in functional groups, used in defining transactions for business data interchange. This standard does not cover the semantic meaning of the information encoded in the transaction sets.

TABLE 1

ST	**Transaction Set Header**	**M, 1**
AK1	**Functional Group Response Header**	**M, 1**
——— Loop ID: AK2 ———		
AK2	**Transaction Set Response Header**	**O,1,999999**
——— Loop ID: AK2/AK3 ———		
AK3	**Data Segment Note**	**O,1,999999**
AK4	**Data Element Note**	**O, 99**
AK5	**Transaction Set Response Trailer**	**M, 1**
AK9	**Functional Group Response Trailer**	**M, 1**
SE	**Transaction Set Trailer**	**M, 1**

Segment: **ST** **Transaction Set Header**

Level: Header

Loop: ____

Usage: Mandatory

Max Use: 1

Purpose: To indicate the start of a transaction set and to assign a control number.

Syntax: 1 The transaction set identifier (ST01) used by the translation routines of the interchange partners to select the appropriate transaction set definition (e.g., 810 selects the invoice transaction set).

Example: ST*997*0001 N/L

Data Element Summary

Ref. Des.	Data Element	Name	Attributes
ST01	**143**	**Transaction Set ID Code** Code uniquely identifying a transaction set.	**M, ID, 3/3**
ST02	**329**	**Transaction Set Control Number** Identifying control number that must be unique within the transaction set functional group assigned by the originator for a transaction set. *Start with 0001 and increment by 1 for each subsequent transaction set.*	**M, AN, 4/9**

Segment: **AK1 Functional Group Response Header**

Level: Header

Loop: ____

Usage: Mandatory

Max Use: 1

Purpose: To start acknowledgment of a functional group.

Syntax: 1 AK101 is the functional ID found in the GS segment (GS01) in the functional group being acknowledged.

2 AK102 is the functional group control number found in the GS segment (GS06) in the functional group being acknowledged.

Notes: *1 AK1 is used to respond to the functional group header and to start the acknowledgement for the functional group that is being acknowledged.*

Example: AK1*RT*1 N/L
AK1*PI*1 N/L

Data Element Summary

Ref. Des.	Data Element	Name	Attributes
AK101	**479**	**Functional Identifier Code** Code identifying a group of application related transaction sets. PT Product Transfer and Resale Report (867) RT Report of Test Results (863)	**M, ID, 2/2**
AK102	**28**	**Group Control Number** Assigned number originated and maintained by the sender. Specific value from GS06 of the functional group being acknowledged.	**M, N0, 1/9**

Segment: **AK2** **Transaction Set Response Header**

Level: Header

Loop: AK2 Repeat: 999999

Usage: Optional

Max Use: 1

Purpose: To start acknowledgment of a single transaction set.

Syntax: 1 AK201 is the transaction set ID found in the ST segment (ST01) in the transaction set being acknowledged.

2 AK202 is the transaction set control number found in the ST segment (ST02) in the transaction set being acknowledged.

Notes: *1 AK2 is used to start the acknowledgement of a transaction set within the received functional group. The AK2 segments shall appear in the same order as the transaction sets in the functional group that has been received and is being acknowledged.*

Example: AK2*863*0001 N/L
AK2*867*0001 N/L

Data Element Summary

Ref. Des.	Data Element	Name	Attributes
AK201	**143**	**Transaction Set Identifier Code** Code uniquely identifying a transaction set.	**M, ID, 3/3**
AK202	**329**	**Transaction Set Control Number** Identifying control number that must be unique within the transaction set functional group assigned by the originator for a transaction set. Contains the value from ST02 of the transaction set being acknowledged.	**M, AN, 4/9**

Segment: **AK3 Data Segment Note**

Level: Header

Loop: AK2/AK3 Repeat: 999999

Usage: Optional

Max Use: 1

Purpose: To report errors in a data segment and to identify the location of the data segment.

Notes: *1 The data segments of this standard are used to report the results of the syntactical analysis of the functional groups of transaction sets; they report the extent to which the syntax complies with the standards for transaction sets and functional groups. They do not report on the semantic meaning of the transaction sets (for example, on the ability of the receiver to comply with the request of the sender).*

Example: AK3*REF*7**5 N/L
AK3*PER*5**8 N/L

Data Element Summary

Ref. Des.	Data Element	Name	Attributes
AK301	**721**	**Segment ID Code** Code defining the segment ID of the data segment in error.	**M, ID, 2/3**
AK302	**719**	**Segment Position In Transaction Set** The numerical count position of this data segment from the start of the transaction set: the transaction set header is count position 1.	**M, N0, 1/6**
AK303	**447**	**Loop Identifier Code** The loop ID number given on the transaction set diagram is the value for this data element in segments LS and LE.	**O, AN, 1/4**
AK304	**720**	**Segment Syntax Error Code** Code indicating error found based on the syntax editing of a segment.	**O, ID, 1/3**
AK305	**720**	**Segment Syntax Error Code** Code indicating error found based on the syntax editing of a segment.	**O, ID, 1/3**
AK306	**720**	**Segment Syntax Error Code**	**O, ID, 1/3**

Ref. Des.	Data Element	Name	Attributes
		Code indicating error found based on the syntax editing of a segment.	
AK307	**720**	**Segment Syntax Error Code**	**O, ID, 1/3**
		Code indicating error found based on the syntax editing of a segment.	
AK308	**720**	**Segment Syntax Error Code**	**O, ID, 1/3**
		Code indicating error found based on the syntax editing of a segment.	

Segment: **AK4 Data Element Note**

Level: Header

Loop: AK2/AK3

Usage: Optional

Max Use: 99

Purpose: To report errors in a data element and to identify the location of the data element.

Example: AK4*1*128*7 N/L

Data Element Summary

Ref. Des.	Data Element	Name	Attributes
AK401	**722**	**Element Position in Segment** This is used to indicate the relative position of the data element in error in this data segment. The count starts with 1 for the data element immediately following the segment ID. This value is 0 for an error in the segment ID.	**M, N0, 1/2**
AK402	**725**	**Data Element Reference Number** Reference number used to locate the Data Element Dictionary.	**O, N0, 1/4**
AK403	**723**	**Data Element Syntax Error Code** Code indicating the error found after syntax edits of a data element.	**M ID, 1/3**
AK404	**724**	**Copy of Bad Data Element** This is a copy of the data element in error.	**O, AN, 1/99**

Segment: **AK5** **Transaction Set Response Trailer**

Level: Header

Loop: AK2

Usage: Mandatory

Max Use: 1

Purpose: To acknowledge acceptance or rejection and to report errors in a transaction set.

Notes: *1 The AK5 is used to end the acknowledgment of a transaction set within the received functional group. The AK5 is mandatory in the AK2 and AK5 loop; however this loop is optional. There is one AK5 segment per AK2 segment.*

Example: AK5*R*5 N/L

Data Element Summary

Ref. Des.	Data Element	Name	Attributes
AK501	**717**	**Transaction Set Acknowledgement Code** Code indicating accept (A)or reject (R) condition based on the syntax editing of the transaction set.	**M, ID, 1/1**
AK502	**718**	**Transaction Set Syntax Error Code** Code indicating error found based on the syntax editing of a transaction set.	**O, ID, 1/3**
AK503	**718**	**Transaction Set Syntax Error Code** Code indicating error found based on the syntax editing of a transaction set.	**O, ID, 1/3**
AK504	**718**	**Transaction Set Syntax Error Code** Code indicating error found based on the syntax editing of a transaction set.	**O, ID, 1/3**
AK505	**718**	**Transaction Set Syntax Error Code** Code indicating error found based on the syntax editing of a transaction set.	**O, ID, 1/3**
AK506	**718**	**Transaction Set Syntax Error Code** Code indicating error found based on the syntax editing of a transaction set.	**O, ID, 1/3**

Segment: **AK9 Functional Group Response Trailer**

Level: Header

Loop: ____

Usage: Mandatory

Max Use: 1

Purpose: To acknowledge acceptance or rejection of a functional group and report the number of included transaction sets from the original trailer, the accepted sets, and the received sets in this functional group.

Comments: A If AK901 is 'A' or 'E', then the transmitted functional group is accepted. If AK901 is 'R', then the transmitted group is rejected.

Notes: 1 The AK9 segment is used to complete the response for the functional group acknowledgement. The AK9 segment is mandatory. In addition to completing the response, it provides a summary of the counts of the transaction sets.

Example: AK9*A*3*3*3 N/L

Data Element Summary

Ref. Des.	Data Element	Name	Attributes
AK901	**715**	**Functional Group Acknowledge Code** Code indicating accept or reject condition based on the syntax editing of the functional group.	**M, ID, 1/1**
AK902	**97**	**Number of Transaction Sets Included** Total number of transaction sets included in the functional group or interchange (message) group terminated by the trailer containing this data element. *Number of received transaction sets (value from GE01 in the received functional group).*	**M, N0, 1/6**
AK903	**123**	**Number of Received Transaction Sets** Number of transaction sets received. *Receivers count.*	**M, N0, 1/6**
AK904	**2**	**Number of Accepted Transaction Sets** Number of accepted transaction sets in a functional group.	**M, N0, 1/6**
AK905	**716**	**Functional Group Syntax Error Code**	**O, ID, 1/3**

Ref. Des.	Data Element	Name	Attributes
		Code indicating error found based on the syntax editing of the functional group header and/or trailer.	
AK906	**716**	**Functional Group Syntax Error Code**	**O, ID, 1/3**
		Code indicating error found based on the syntax editing of the functional group header and/or trailer.	
AK907	**716**	**Functional Group Syntax Error Code**	**O, ID, 1/3**
		Code indicating error found based on the syntax editing of the functional group header and/or trailer.	
AK908	**716**	**Functional Group Syntax Error Code**	**O, ID, 1/3**
		Code indicating error found based on the syntax editing of the functional group header and/or trailer.	
AK909	**716**	**Functional Group Syntax Error Code**	**O, ID, 1/3**
		Code indicating error found based on the syntax editing of the functional group header and/or trailer.	

Segment: **SE** **Transaction Set Trailer**

Level: Header

Loop: ____

Usage: Mandatory

Max Use: 1

Purpose: To indicate the end of the transaction set and provide the count of the transmitted segments (including the beginning (ST) and ending (SE) segments).

Comments: A SE is the last segment of each transaction set.

Example: SE*14*0001 N/L

Data Element Summary

Ref. Des.	Data Element	Name	Attributes
SE01	**96**	**Number of Included Segments** Total number of segments included in a transaction set including ST and SE segments.	**M, N0, 1/10**
SE02	**329**	**Transaction Set Control Number** Identifying control number that must be unique within the transaction set functional group assigned by the originator for a transaction set *Must be the same value as ST02.*	**M, AN, 4/9**

9.3.2 Sample Functional Acknowledgment 997 T ransaction

This example demonstrates the acknowledgement that might be sent upon receipt of a message containing 3 reports **(**transaction set 863 - Report of Test Results); two were correct; the third had an error in the eighth segment, a PER which contained an invalid code in the second data element.

```
ST*997*0001 N/L
AK1*RT*2  N/L
AK2*863*0001 N/L
AK5*A  N/L
AK2*863*0002 N/L
AK5*A  N/L
AK2*863*0003 N/L
AK3*PER*8  N/L
AK4*2*366*7  N/L
AK5*R  N/L
AK9*A*3*3*2  N/L
SE*12*0001  N/L
```

APPENDIX A

A.1 Batch Report Introduction

Purpose: Submitted by refiners and importers of reformulated and conventional gasolines, and gasoline blendstocks, oxygenate blenders of averaged reformulated gasoline (RFG) and laboratories used by refiners and importers of RFG and RBOB, to meet independent sampling and testing requirements. Used to report the properties, composition, and emissions performance of each volume (batch) of gasoline.

Timing: For batches of RFG, RBOB and GTAB, required no later than the last day of the second month following each calendar quarter in which production or importation occurred. For batches of conventional gasoline or applicable blendstocks, the batch report is required by the last day of February following the calendar year in which production or importation occurred.

Early submissions of the reports are encouraged. Reports may be transmitted daily.

Transaction Set: ASC X12 Report of Test Results (863) Version/Release 003060.

General:

1. Information for multiple batches may be sent in a transaction set.

2. Original (first time submitted) and Re-submitted (changed/corrected) reports are supported. Identification is by a code in BTR01. All information except the Batch Number may be re-submitted (changed).

   When sending a Re-submission, a new Report Number may be provide in BTR05 and the Report Number of the original should be provided in BTR06. It is not required that BTR05 or BTR06 be used.

   If the information being corrected is Table 1 data, information common to all batches, it is necessary to re-submit the information for all the batches in the original submission. If the information being corrected is specific to a batch, complete information for the batch being corrected as required.

Mapping Notes:

1. Table 1 is used only for administrative type data.

2. Table 2 contains the identification of the batch being reported and its properties.

3. One LIN Loop is used per batch.

4. Multiple CID*D7 Loops within the LIN are to report the Distillation Fraction at 200 and 300 degrees Fahrenheit.

5. Property and Emissions Performance values are reported in Measurement Segments.

6. Identification of the property being reported is in the Measurement Segment for the following. The codes are X12 Codes from DE 738 and appear in MEA02.

X12 CODE	MEA02, DE 738
API	API Gravity
A4	Aromatics
ZBZ	Benzene
D7	Distillation Fraction (E200, E300)
EXH	Exhaust Benzene Emissions
NOx	NOx Emissions Performance
OLE	Olefins
ZO	Oxygen
RVP	Reid Vapor Pressure
ZS	Sulfur
T50	T50
T90	T90
TOX	Toxics Emissions Performance
VOC	VOC Emissions Performance

Note: The entry "ROX" for renewable oxygenate is no longer represented on this table.

When reporting the following properties, it is necessary to use a MEA Segment and its associated LM/LQ Segment Loop for each of the properties. The codes are Chemical Abstract Service (CAS) codes. The MEA Segment will not use a code value in MEA02. The LM Segment contains CA in LM01 to reference the Chemical Abstract Service. The LQ Segment contains the property code in LQ02.

Chemical Abstract Service Codes (CAS)	
637-92-3	ETBE (Ethyl t-Butyl Ether)
64-17-5	Ethanol
1634-04-4	MTBE (Methyl t-Butyl Ether)
67-56-1	Methanol
75-65-0	t-Butanol
1784-03-8	TAME (t-Amyl Methyl Ether)

7. The following chart identifies the precision and the unit of measurement for the properties to be reported. The **S** or **C** in PID04 indicates the need for a MEA07.

PROPERTY	MEA02	MEA03	MEA04		PID04		MEA07 DESIGNATORS	
	LQ02*	VALUE	CODE	UM	S	C	AVERAGE	PER GALLON
BENZENE CONTENT	ZBZ	X.XX	P1	% (VOL)	S	C	44	45
OXYGEN CONTENT	ZO	X.XX	P1	% (WT)	S	C	44	45
NOx	NOX	XX.X	P1	% (RED)		C	44	45
RVP	RVP	XX.XX	PS	PSI	S		44	45
TOXICS EMMISSIONS PERFORMANCE	TOX	XX.X	P1	% (RED)	S	C	44	45
VOC EMMISSIONS PERFORMANCE	VOC	XX.X	P1	% (RED)		C	44	45
SULFUR CONTENT	ZS	XXXX	59	PPM				
API GRAVITY	API	XX.XX	69	TEST SPECIFIC SCALE				
AROMATICS CONTENT	A4	XX.X	P1	% (VOL)				
E200, DISTILLATION FRACTION	D7	XX.X	P1	% (VOL)				
E300, DISTILLATION FRACTION	D7	XX.X	P1	% (VOL)				
ETBE	* 637-92-3	XX.XX	P1	% (VOL)				
ETHANOL	* 64-17-5	XX.XX	P1	% (VOL)				
EXHAUST BENZENE EMISSIONS	EXH	XXX.XX	ME::: DH:-1	(MG/ MILES)				
METHANOL	* 67-56-1	XX.XX	P1	% (VOL)				
MTBE	* 1634-04-4	XX.XX	P1	% (VOL)				
OLEFINS CONTENT	OLE	XX.X	P1	% (VOL)				
T50	T50	XXX.X	FA	DEG F				
T90	T90	XXX.X	FA	DEG F				
TAME	* 1784-03-8	XX.XX	P1	% (VOL)				
t-BUTANOL	* 75-65-0	XX.XX	P1	% (VOL)				

*****Properties with codes marked with an asterisk (*****) use Chemical Abstract Service Codes and are to be shown in an LQ Segment.

Note: The entry for Renewable Oxygenates ("ROX") is no longer represented in this table and should not be included in future transactions submitted to EPA.

A.2 Batch Report Map

```
863     Report of Test Results
        ------------------------------------------------------------------
        This Draft Standard for Trial Use contains the format and
        establishes the data contents of the Report of Test Results
        Transaction Set (863) for use within the context of an Electronic
        Data Interchange (EDI) environment. The transaction set can be
        used to transmit the results of tests performed to satisfy a
        specified product or process requirement. This includes, but is
        not limited to, test data such as inspection data, certification
        data, and statistical process control measurements.
        ------------------------------------------------------------------
    ST  Transaction Set Header            M      1
    BTR Beginning Segment for Test Result M      1
N/U NTE Note/Special Instruction          F    100
N/U REF Reference Numbers                 O     12
    DTM Date/Time Reference               O     10
N/U PID Product/Item Description          O    200
N/U TMD Test Method                       O      1
N/U MEA Measurements                      O     20
    --- Loop ID: N1 ---------------------------------------------------------+
    N1  Name                              O      1     >1                     |
N/U N2  Additional Name Information       O      2                            |
N/U N3  Address Information               O      2                            |
N/U N4  Geographic Location               O      1                            |
    REF Reference Numbers                 O     12                            |
    --- Loop ID: N1/PER ------------------------------------------------+      |
    PER Administrative Communications Con O      1     >1              |      |
    REF Reference Numbers                 O     >1                     |      |
    ------------------------------------------------------------------+------+
    --- Loop ID: LIN ---------------------------------------------------------+
    LIN Item Identification               O      1     >1                     |
    PID Product/Item Description          O   1000                          |
N/U TMD Test Method                       O      1                            |
N/U MEA Measurements                      O     20                            |
N/U PSD Physical Sample Description       O     >1                            |
N/U SPS Sampling Parameters for Summary S O     >1                            |
    QTY Quantity                          O     10                            |
    DTM Date/Time Reference               O     10                            |
N/U REF Reference Numbers                 O   1000                          |
    --- Loop ID: LIN/N1 ---------------------------------------------+      |
N/U N1  Name                              O      1     10              |      |
N/U N2  Additional Name Information       O      2                     |      |
N/U N3  Address Information               O      2                     |      |
N/U N4  Geographic Location               O      1                     |      |
N/U REF Reference Numbers                 O     10                     |      |
N/U PER Administrative Communications Con O      3                     |      |
N/U QTY Quantity                          O     10                     |      |
    ------------------------------------------------------------------+      |
    --- Loop ID: LIN/CID ----------------------------------------------+      |
    CID Characteristic/Class ID           O      1     >1              |      |
N/U UIT Unit Detail                       O      1                     |      |
N/U PSD Physical Sample Description       O     >1                     |      |
N/U SPS Sampling Parameters for Summary S O     >1                     |      |
N/U DTM Date/Time Reference               O     10                     |      |
N/U REF Reference Numbers                 O     10                     |      |
    --- Loop ID: LIN/CID/MEA ----------------------------------+      |      |
    MEA Measurements                      O      1     >1       |      |      |
N/U DTM Date/Time Reference               O     10              |      |      |
N/U REF Reference Numbers                 O     10              |      |      |
```

```
    --- Loop ID: LIN/CID/MEA/LM -----------------------------------+ | | |
    LM  Code Source Information           O      1     >1          | | | |
    LQ  Industry Code                     M     >1                 | | | |
    -------------------------------------------------------------+-+ | |
    --- Loop ID: LIN/CID/STA -------------------------------------+ | |
N/U STA Statistics                        O      1     >1          | | |
N/U DTM Date/Time Reference               O     10                 | | |
N/U REF Reference Numbers                 O     10                 | | |
    --- Loop ID: LIN/CID/STA/LM ----------------------------------+ | | |
N/U LM  Code Source Information           O      1     >1          | | | |
N/U LQ  Industry Code                     M     >1                 | | | |
    -------------------------------------------------------------+-+ | |
    --- Loop ID: LIN/CID/TMD -------------------------------------+ | |
N/U TMD Test Method                       O      1    100          | | |
N/U MEA Measurements                      O     >1                 | | |
N/U DTM Date/Time Reference               O     10                 | | |
N/U REF Reference Numbers                 O     10                 | | |
    -------------------------------------------------------------+ | |
    --- Loop ID: LIN/CID/TSP -------------------------------------+ | |
N/U TSP Test Period or Interval           O      1     >1          | | |
N/U MEA Measurements                      O     >1                 | | |
N/U DTM Date/Time Reference               O     10                 | | |
N/U REF Reference Numbers                 O     10                 | | |
    --- Loop ID: LIN/CID/TSP/LM ----------------------------------+ | | |
N/U LM  Code Source Information           O      1     >1          | | | |
N/U LQ  Industry Code                     M     >1                 | | | |
    -------------------------------------------------------------+-+-+-+
N/U CTT Transaction Totals                O      1
    SE  Transaction Set Trailer           M      1
```

```
  SEGMENT: ST Transaction Set Header
    LEVEL: Header
     LOOP: ____
    USAGE: Mandatory
  MAX USE: 1
  PURPOSE: To indicate the start of a transaction set and to assign a
           control number
 SEMANTIC:  1. The transaction set identifier (ST01) used by the
               translation routines of the interchange partners to select
               the appropriate transaction set definition (e.g., 810
               selects the invoice transaction set).
>EXAMPLES:  1. ST*863*0001 N/L

DATA ELEMENT SUMMARY ------------------------------------------------

ST01  143  TRANSACTION SET IDENTIFIER CODE                   M ID 3/3
           Code uniquely identifying a Transaction Set.
ST02  329  TRANSACTION SET CONTROL NUMBER                    M AN 4/9
           Identifying control number that must be unique within the
           transaction set functional group assigned by the originator for
           a transaction set
>          Start with 0001 and increment by 1 for each subsequent
>          transaction set.
```

```
  SEGMENT: BTR Beginning Segment for Test Results
    LEVEL: Header
     LOOP: ____
    USAGE: Mandatory
  MAX USE: 1
  PURPOSE: To indicate the beginning of a test results transaction set.
 SEMANTIC:  1. If BTR01 equals 01, 02, 03, 04, 05, 18 or 19, then BTR06 is
               required to identify the original test report reference
               number transmitted.
            2. BTR02 is the date that this transaction set was created by
               the sending party.
            3. BTR03 is the time that this transaction set was created by
               the sending party.
            4. BTR05 specifies test results report reference number
               created by the sending party.
>   NOTES:  1. The EPA for the Reformulated Gasoline and Anti-Dumping
>              Program supports only Original and Re-submission
>              Transaction Set Purposes.
>           2. BTR07: A data maintenance request was submitted in October
>              1994 to add Data Element 786, Security Level Code.
>EXAMPLES:  1. BTR*00*931225*2300*B1*628307**02 N/L
              BTR*15*931225*2300*B1*628307*62503*02 N/L

DATA ELEMENT SUMMARY ------------------------------------------------------

BTR01 353  TRANSACTION SET PURPOSE CODE                        M ID 2/2
           Code identifying purpose of transaction set.
               00 Original
               15 Re-Submission
BTR02 373  DATE Transaction Set was created.                   M DT 6/6
           Date (YYMMDD).
BTR03 337  TIME Transaction Set was created.                   O TM 4/8
           Time expressed in 24-hour clock time as follows: HHMM, or
           HHMMSS, or HHMMSSD, or HHMMSSDD, where H = hours (00-23), M =
           minutes (00-59), S = integer seconds (00-59) and DD = decimal
           seconds; decimal seconds are expressed as follows: D = tenths
           (0-9) and DD = hundredths (00-99)
>          Required
BTR04 755  REPORT TYPE CODE                                    O ID 2/2
           Code indicating the title or contents of a document, report or
           supporting item
>          Required
>          B1 - Batch Report
BTR05 127  REFERENCE NUMBER                                    O AN 1/30
           Reference number or identification number as defined for a
           particular Transaction Set, or as specified by the Reference
           Number Qualifier.
>          Optional
>          Document tracking number assigned by the sender.
BTR06 127  REFERENCE NUMBER                                    O AN 1/30
           Reference number or identification number as defined for a
           particular Transaction Set, or as specified by the Reference
           Number Qualifier.
>          Previous document number is required when the document is a
>          Re-submission (i.e. BTR01 = 15) and if BTR05 was provided in
>            the original submission.
BTR07 786  SECURITY LEVEL CODE                                 O ID 2/2
           Code indicating the level of confidentiality assigned by the
           sender to the information following.     A value of “02" indicates
>            “company confidential”.
```

```
  SEGMENT: DTM Date/Time Reference
    LEVEL: Header
     LOOP: ____
>   USAGE: Optional NOTE: Required
  MAX USE: 10
  PURPOSE: To specify pertinent dates and times
   SYNTAX:  1. R020306--At least one of DTM02, DTM03 or DTM06 is required.
            2. P0607--If either DTM06 or DTM07 is present, then the other
               is required.
>   NOTES:  1. One occurrence is required to report the date the report
>              was certified.
>EXAMPLES:  1. DTM*458*931223 N/L

DATA ELEMENT SUMMARY ------------------------------------------------------

DTM01 374  DATE/TIME QUALIFIER                                  M ID 3/3
           Code specifying type of date or time, or both date and time.
              458 Certification
DTM02 373  DATE                                                 X DT 6/6
           Date (YYMMDD).
>          Required
DTM03 337  TIME                                                 X TM 4/8
           Time expressed in 24-hour clock time as follows: HHMM, or
           HHMMSS, or HHMMSSD, or HHMMSSDD, where H = hours (00-23), M =
           minutes (00-59), S = integer seconds (00-59) and DD = decimal
           seconds; decimal seconds are expressed as follows: D = tenths
           (0-9) and DD = hundredths (00-99)
>          Not Used
DTM04 623  TIME CODE                                            O ID 2/2
           Code identifying the time. In accordance with International
           Standards Organization standard 8601, time can be specified by
           a + or - and an indication in hours in relation to Universal
           Time Coordinate (UTC) time. Since + is a restricted character,
           + and - are substituted by P and M in the codes that follow.
>          Not Used
DTM05 624  CENTURY                                              O N0 2/2
           The first two characters in the designation of the year (CCYY).
>          Not Used
DTM06 1250 DATE TIME PERIOD FORMAT QUALIFIER                    X ID 2/3
           Code indicating the date format, time format, or date and time
           format.
>          Not Used
DTM07 1251 DATE TIME PERIOD                                     X AN 1/35
           Expression of a date, a time, or range of dates, times or dates
           and times.
>          Not Used
```

```
  SEGMENT: N1 Name
    LEVEL: Header
     LOOP: N1 Repeat: >1
>   USAGE: Optional NOTE: Required
  MAX USE: 1
  PURPOSE: To identify a party by type of organization, name and code
   SYNTAX:  1. R0203--At least one of N102 or N103 is required.
            2. P0304--If either N103 or N104 is present, then the other is
               required.
 COMMENTS:  A. This segment, used alone, provides the most efficient
               method of providing organizational identification. To
               obtain this efficiency the "ID Code" (N104) must provide a
               key to the table maintained by the transaction processing
               party.
            B. N105 and N106 further define the type of entity in N101.
>   NOTES:  1. Two occurrences are required. One identifies the company
                certifying and submitting the report. The other identifies the
>               EPA office receiving the report.  The company is identified by
>               an EPA assigned code and requires a qualifier of EP in N103.
>              The identification of the EPA Office is a DUNs Number and
>              requires an N103 qualifier of 1.
>EXAMPLES:  1. N1*PV*NAME*EP*5432 N/L
              N1*ZD**1*873186902 N/L

DATA ELEMENT SUMMARY ------------------------------------------------------

N101  98   ENTITY IDENTIFIER CODE                              M ID 2/2
           Code identifying an organizational entity, a physical location,
           or an individual
               PV Party performing certification
>                 Used to identify the certifying party (submitter).
               ZD Party to Receive Reports
>                 Used to identify the EPA Office.
N102  93   NAME                                               X AN 1/35
           Free-form name.
>          Required when N101 is PV.
>          Insert the name of the reporting company, as registered with EPA.
N103  66   IDENTIFICATION CODE QUALIFIER                      X ID 1/2
           Code designating the system/method of code structure used for
           Identification Code (67).
>          Required
                1 D-U-N-S Number, Dun & Bradstreet
               EP U.S. Environmental Protection Agency (EPA)
N104  67   IDENTIFICATION CODE                                X AN 2/20
           Code identifying a party or other code.
>          Required
>          EPA assigned four digit ID for the company certifying and
>          submitting the report. This will be either the company
>          producing or importing the batch or the independent lab.
>          873186902 - EPA Office DUNs Number.
N105  706  ENTITY RELATIONSHIP CODE                           O ID 2/2
           Code describing entity relationship.
>          Not Used
N106  98   ENTITY IDENTIFIER CODE                             O ID 2/2
           Code identifying an organizational entity, a physical location,
           or an individual
>          Not Used
```

```
  SEGMENT: REF Reference Numbers
    LEVEL: Header
     LOOP: N1
>   USAGE: Optional NOTE: Required
  MAX USE: 12
  PURPOSE: To specify identifying numbers.
   SYNTAX:  1. R0203--At least one of REF02 or REF03 is required.
>   NOTES:  1. This REF Segment at REF02 communicates the EPA
>              assigned PIN ID for the certifier's (submitters) company.
>EXAMPLES:  1. REF*4A*1234 N/L

DATA ELEMENT SUMMARY ------------------------------------------------------

REF01 128  REFERENCE NUMBER QUALIFIER                          M ID 2/2
           Code qualifying the Reference Number.
               4A Personal Identification Number (PIN)
REF02 127  REFERENCE NUMBER                                    X AN 1/30
           Reference number or identification number as defined for a
           particular Transaction Set, or as specified by the Reference
           Number Qualifier.
>          Required
>          4 digit alphanumeric code assigned by the EPA to the corporation
>          This REF segment for Corporate PIN should immediately follow the
>          N1*PV segment.
REF03 352  DESCRIPTION                                         X AN 1/80
           A free-form description to clarify the related data elements
           and their content.
>          Not Used
```

```
  SEGMENT: PER Administrative Communications Contact
    LEVEL: Header
     LOOP: N1/PER Repeat: >1
>   USAGE: Optional NOTE: Required
  MAX USE: 1
  PURPOSE: To identify a person or office to whom administrative
           communications should be directed
   SYNTAX:  1. P0304--If either PER03 or PER04 is present, then the other
               is required.
            2. P0506--If either PER05 or PER06 is present, then the other
               is required.
>   NOTES:  1. Two occurences are required.
>            One identifies the name and title (via PER01)of the responsible
             corporate officer certifying the report. This is shown in the
             example starting PER*CE.
>            The other identifies the name and telephone number and fax number
             of an authorized contact(When the PER01 is AA).
>EXAMPLES:  1. PER*AA*G.D. MARSH*TE*610/452-1234*FX*610/453-5432 N/L
               PER*CE*PETER R. JONES*TE*610/452-1234 N/L

DATA ELEMENT SUMMARY ------------------------------------------------------

PER01 366  CONTACT FUNCTION CODE                                  M ID 2/2
           Code identifying the major duty or responsibility of the person
           or group named.
>          Select the appropriate title from Data Element 366 Code List.
>          If an appropriate title is not found use CE, Certifier.
               AA Authorized Representative
               CE Certifier
PER02 93   NAME                                                   O AN 1/35
           Free-form name.
>          Required
PER03 365  COMMUNICATION NUMBER QUALIFIER                         X ID 2/2
           Code identifying the type of communication number.
>          Required when PER01 = AA
               TE Telephone
PER04 364  COMMUNICATION NUMBER                                   X AN 1/12
           Complete communications number including country or area code
           when applicable.
>          Required when PER01 = AA
PER05 365  COMMUNICATION NUMBER QUALIFIER                         X ID 2/2
           Code identifying the type of communication number.
>          Recommended
               FX Facsimile
PER06 364  COMMUNICATION NUMBER                                   X AN 1/12
           Complete communications number including country or area code
           when applicable.
>          Recommended
>            The PER*AA segment should immediately follow the REF segment for
             the Corporate PIN, which follows the N1*PV segment.
>            The PER*CE segment should follow the PER*AA segment.
```

```
  SEGMENT: REF Reference Numbers
    LEVEL: Header
     LOOP: N1/PER
>   USAGE: Optional NOTE: Required
  MAX USE: >1
  PURPOSE: To specify identifying numbers.
   SYNTAX:  1. R0203--At least one of REF02 or REF03 is required.
>   NOTES:  1. This REF Segment communicates the EPA assigned PIN ID
              for the responsible corporate officer certifying this document.
            2. This REF segment is required only when PER01=CE (certifier)
              and should immediately follow that use of the PER segment.
>EXAMPLES:  1. REF*4A*A534 N/L

DATA ELEMENT SUMMARY ------------------------------------------------------

REF01 128  REFERENCE NUMBER QUALIFIER                          M ID 2/2
           Code qualifying the Reference Number.
>              4A Personal IdentificationD Number
                  (responsible corporate officer)
REF02 127  REFERENCE NUMBER                                    X AN 1/9
           Reference number or identification number as defined for a
           particular Transaction Set, or as specified by the Reference
           Number Qualifier.
>          Required
>          4 digit alphanumeric code assigned by EPA to an individual
>          who may certify reports for this company and facility.
REF03 352  DESCRIPTION                                         X AN 1/80
           A free-form description to clarify the related data elements
           and their content.
>          Not Used
```

```
  SEGMENT: LIN Item Identification
    LEVEL: Detail
     LOOP: LIN Repeat: >1
>   USAGE: Optional NOTE: Required
  MAX USE: 1
  PURPOSE: To specify basic item identification data.
   SYNTAX:  1. P0405--If either LIN04 or LIN05 is present, then the other
               is required.
            2. P0607--If either LIN06 or LIN07 is present, then the other
               is required.
            3. P0809--If either LIN08 or LIN09 is present, then the other
               is required.
            4. P1011--If either LIN10 or LIN11 is present, then the other
               is required.
            5. P1213--If either LIN12 or LIN13 is present, then the other
               is required.
            6. P1415--If either LIN14 or LIN15 is present, then the other
               is required.
            7. P1617--If either LIN16 or LIN17 is present, then the other
               is required.
            8. P1819--If either LIN18 or LIN19 is present, then the other
               is required.
            9. P2021--If either LIN20 or LIN21 is present, then the other
               is required.
           10. P2223--If either LIN22 or LIN23 is present, then the other
               is required.
           11. P2425--If either LIN24 or LIN25 is present, then the other
               is required.
           12. P2627--If either LIN26 or LIN27 is present, then the other
               is required.
           13. P2829--If either LIN28 or LIN29 is present, then the other
               is required.
           14. P3031--If either LIN30 or LIN31 is present, then the other
               is required.
 SEMANTIC:  1. LIN01 is the line item identification
 COMMENTS:  A. See the Data Dictionary for a complete list of ID's.
            B. LIN02 through LIN31 provide for fifteen (15) different
               product/service ID's for each item. For Example: Case,
               Color, Drawing No., UPC No., ISBN No., Model No., SKU.
>   NOTES:  1. Only one pair of 234/235 data elements is used.
>EXAMPLES:  1. LIN**B8*CCCCFFFFFRYNNNNNN N/L

DATA ELEMENT SUMMARY ------------------------------------------------

LIN01 350  ASSIGNED IDENTIFICATION                          O AN 1/11
           Alphanumeric characters assigned for differentiation within a
           transaction set.
>          Not Used
LIN02 235  PRODUCT/SERVICE ID QUALIFIER                     M ID 2/2
           Code identifying the type/source of the descriptive number used
           in Product/Service ID (234).
               B8 Batch Number
LIN03 234  PRODUCT/SERVICE ID                               M AN 1/30
           Identifying number for a product or service.
>          The batch Identification occurs as the format
>          CCCCFFFFFRYNNNNNN.
>          CCCC = The EPA assigned four digit ID for the company
>          producing or importing the batch.
>          FFFFF = The EPA assigned five digit ID for the facility
>          producing or importing the batch.
>          RY = Reporting Year. The calendar year in which the batch was
>          produced or imported.
```

```
>          NNNNNN = Batch Number. The facility-assigned six digit number
>          identifying the batch this report describes.
```

```
  SEGMENT: PID Product/Item Description
    LEVEL: Detail
     LOOP: LIN
>   USAGE: Optional NOTE: Required
  MAX USE: 1000
  PURPOSE: To describe a product or process in coded or free-form format
   SYNTAX:  1. C0403--If PID04 is present, then PID03 is required.
            2. R0405--At least one of PID04 or PID05 is required.
            3. C0703--If PID07 is present, then PID03 is required.
            4. C0803--If PID08 is present, then PID03 is required.
 SEMANTIC:  1. Use PID03 to indicate the organization that publishes the
               code list being referred to.
            2. PID04 should be used for industry-specific product
               description codes.
            3. PID08 describes the physical characteristics of the product
               identified in PID04. A ``Y'' indicates that the specified
               attribute applies to this item. A ``N'' indicates it does
               not apply. Any other value is indeterminate.
 COMMENTS:  A. If PID01 = ``F'', then PID05 is used. If PID01 = ``S'',
               then PID04 is used. If PID01 = ``X'', then both PID04 and
               PID05 are used.
            B. Use PID06 when necessary to refer to the product surface or
               layer being described in the segment.
            C. PID07 specifies the individual code list of the agency
               specified in PID03.
>EXAMPLES:  1. PID*S*08*EP**RG****N N/L
               PID*S*08*EP**RT****Y N/L
               PID*S*38*EP*PR N/L
               PID*S*VC*EP*VN N/L

DATA ELEMENT SUMMARY ------------------------------------------------

PID01 349  ITEM DESCRIPTION TYPE                                M ID 1/1
           Code indicating the format of a description.
                S Structured (From Industry Code List)
PID02 750  PRODUCT/PROCESS CHARACTERISTIC CODE                  O ID 2/3
           Code identifying the general class of a product or process
           characteristic
>          Required
>          Codes 08 and CM are required.
>          Code 38 is required when PID02 = 08 and PID04 = CG or RG.
>          Codes PG and VC are required for Reformulated Gasoline and
>          RBOB only.
               08 Product
               38 Grade
               CM Compliance Method
               PG Program
               VC Volatile Organic Compound Control
PID03 559  AGENCY QUALIFIER CODE                                X ID 2/2
           Code identifying the agency assigning the code values.
>          Required
               EP United States Environmental Protection Agency (EPA)
PID04 751  PRODUCT DESCRIPTION CODE                             X AN 1/12
           A code from an industry code list which provides specific data
           about a product characteristic.
>          Required
>          See EPA maintained Reformulated Gasoline and Anti-dumping
>          Program code list.
PID05 352  DESCRIPTION                                          X AN 1/80
           A free-form description to clarify the related data elements
           and their content.
>          Not Used
```

```
PID06 752  SURFACE/LAYER/POSITION CODE                        O ID 2/2
           Code indicating the product surface, layer or position that is
           being described.
>          Not Used
PID07 822  SOURCE SUBQUALIFIER                                O AN 1/15
           A reference that indicates the table or text maintained by the
           Source Qualifier.
>          Not Used
PID08 1073 YES/NO CONDITION OR RESPONSE CODE                  O ID 1/1
           Code indicating a Yes or No condition or response.
>          Required when PID02 = 08, and PID04 contains a code for
>          Reformulated Gasoline or any of the RBOB codes.
                N No
>                 Not waived from independent lab testing.
                Y Yes
>                 Waived from independent lab testing.
```

```
  SEGMENT: QTY Quantity
    LEVEL: Detail
     LOOP: LIN
>   USAGE: Optional NOTE: Required
  MAX USE: 10
  PURPOSE: To specify quantity information.
>EXAMPLES:  1. QTY*01*100000*GA N/L

DATA ELEMENT SUMMARY ------------------------------------------------------

QTY01 673  QUANTITY QUALIFIER                                    M ID 2/2
           Code specifying the type of quantity.
               01 Discrete Quantity
QTY02 380  QUANTITY                                              M R 1/15
           Numeric value of quantity.
QTY03 355  UNIT OR BASIS FOR MEASUREMENT CODE                    O ID 2/2
           Code specifying the units in which a value is being expressed,
           or manner in which a measurement has been taken
>          Required
               GA Gallon
```

```
  SEGMENT: DTM Date/Time Reference
    LEVEL: Detail
     LOOP: LIN
>   USAGE: Optional NOTE: Required
  MAX USE: 10
  PURPOSE: To specify pertinent dates and times
   SYNTAX:  1. R020306--At least one of DTM02, DTM03 or DTM06 is required.
            2. P0607--If either DTM06 or DTM07 is present, then the other
               is required.
>EXAMPLES:  1. DTM*405*931222 N/L

DATA ELEMENT SUMMARY ------------------------------------------------------

DTM01 374  DATE/TIME QUALIFIER                                  M ID 3/3
           Code specifying type of date or time, or both date and time.
              405 Production
DTM02 373  DATE                                                 X DT 6/6
           Date (YYMMDD).
>          Used to indicate the END DATE the volume of gasoline was
>          produced.
DTM03 337  TIME                                                 X TM 4/8
           Time expressed in 24-hour clock time as follows: HHMM, or
           HHMMSS, or HHMMSSD, or HHMMSSDD, where H = hours (00-23), M =
           minutes (00-59), S = integer seconds (00-59) and DD = decimal
           seconds; decimal seconds are expressed as follows: D = tenths
           (0-9) and DD = hundredths (00-99)
>          Not Used
DTM04 623  TIME CODE                                            O ID 2/2
           Code identifying the time. In accordance with International
           Standards Organization standard 8601, time can be specified by
           a + or - and an indication in hours in relation to Universal
           Time Coordinate (UTC) time. Since + is a restricted character,
           + and - are substituted by P and M in the codes that follow.
>          Not Used
DTM05 624  CENTURY                                              O N0 2/2
           The first two characters in the designation of the year (CCYY).
>          Not Used
DTM06 1250 DATE TIME PERIOD FORMAT QUALIFIER                    X ID 2/3
           Code indicating the date format, time format, or date and time
           format.
>          Not Used
DTM07 1251 DATE TIME PERIOD                                     X AN 1/35
           Expression of a date, a time, or range of dates, times or dates
           and times.
>          Not Used
```

```
  SEGMENT: CID Characteristic/Class ID
    LEVEL: Detail
     LOOP: LIN/CID Repeat: >1
>   USAGE: Optional NOTE: Required
  MAX USE: 1
  PURPOSE: To specify the general class or specific characteristic upon
           which test results are being reported or are to be taken
   SYNTAX:  1. R01020405--At least one of CID01, CID02, CID04 or CID05 is
               required.
            2. P0304--If either CID03 or CID04 is present, then the other
               is required.
            3. C060304--If CID06 is present, then CID03 and CID04 are
               required.
            4. L070405--If CID07 is present, then at least one of CID04 or
               CID05 are required.
 COMMENTS:  A. CID06 specifies the individual code list of the agency
               specified in CID03.
            B. CID07 refers to whether or not the characteristic
               identified in CID04 or CID05 or both is affected by the
               product change. If it is affected, the value is ``Y''. A
               value of ``N'' is used when it is known that it will not be
               affected. Any other value indicates it is indeterminate.
>EXAMPLES:  1. CID**68 N/L
               CID*D7 N/L

DATA ELEMENT SUMMARY ------------------------------------------------------

CID01 738  MEASUREMENT QUALIFIER                                X ID 1/3
           Code identifying a specific product or process characteristic
           to which a measurement applies
>            If CID01 is used, CID02 should be null.
>              D7 Distillation Fraction
>                 Required when reporting the results of properties E200
>                 and E300.
CID02 750  PRODUCT/PROCESS CHARACTERISTIC CODE                  X ID 2/3
           Code identifying the general class of a product or process
           characteristic
>             If CID02 is used, CID01 should be null.
>               68 Chemistry
>                  Required when reporting Gasoline Properties (other than
>                  E200 and E300) and Emissions Performance Calculations.
CID03 559  AGENCY QUALIFIER CODE                                X ID 2/2
           Code identifying the agency assigning the code values.
>          Not Used
CID04 751  PRODUCT DESCRIPTION CODE                             X AN 1/12
           A code from an industry code list which provides specific data
           about a product characteristic.
>          Not Used
CID05 352  DESCRIPTION                                          X AN 1/80
           A free-form description to clarify the related data elements
           and their content.
>          Not Used
CID06 822  SOURCE SUBQUALIFIER                                  O AN 1/15
           A reference that indicates the table or text maintained by the
           Source Qualifier.
>          Not Used
CID07 1073 YES/NO CONDITION OR RESPONSE CODE                    O ID 1/1
           Code indicating a Yes or No condition or response.
>          Not Used
```

```
  SEGMENT: MEA Measurements
    LEVEL: Detail
     LOOP: LIN/CID/MEA Repeat: >1
>   USAGE: Optional NOTE: Required
  MAX USE: 1
  PURPOSE: To specify physical measurements or counts, including
           dimensions, tolerances, variances, and weights<R> <R> (See
           Figures Appendix for example of use of C001.)
   SYNTAX:  1. R03050608--At least one of MEA03, MEA05, MEA06 or MEA08 is
               required.
            2. C0504--If MEA05 is present, then MEA04 is required.
            3. C0604--If MEA06 is present, then MEA04 is required.
            4. L07030506--If MEA07 is present, then at least one of MEA03,
               MEA05 or MEA06 are required.
            5. E0803--Only one of MEA08 or MEA03 may be present.
 SEMANTIC:  1. MEA04 defines the unit of measure for MEA03, MEA05, and
               MEA06.
 COMMENTS:  A. When citing dimensional tolerances, any measurement
               requiring a sign (+ or -), or any measurement where a
               positive (+) value cannot be assumed use MEA05 as the
               negative (-) value and MEA06 as the positive (+) value.
>EXAMPLES:  1. MEA*EN*D7*200*FA N/L
               MEA*TR*D7*30.5*P1 N/L
               MEA*TR*ZBZ*1.99*P1***44 N/L
               MEA*TR*ZO*2.00*P1 N/L
               MEA*TR*EXH*.35*ME:::DH:-1 N/L

DATA ELEMENT SUMMARY ------------------------------------------------------

MEA01 737  MEASUREMENT REFERENCE ID CODE                      O ID 2/2
           Code identifying the broad category to which a measurement
           applies
>          Required
               EN Environmental Conditions
>                 Required when reporting the results of E200 and E300
>                 (Distillation Fraction) to identify the temperatures at
>                 which the test results obtained.
               TR Test Results
MEA02 738  MEASUREMENT QUALIFIER                              O ID 1/3
           Code identifying a specific product or process characteristic
           to which a measurement applies
>          Required when reporting the following Gasoline Properties and
>          Emissions Performance Calculations.
>          Not Required when reporting Gasoline Properties for ETBE
>          (Ethyl t-Butyl Ether), Ethanol, MTBE (Methyl t-Butyl Ether),
>          Methanol, t-Butanol, or TAME (t-Amyl Methyl Ether) as X12
>          Codes are not available. Chemical Abstract Services codes are
>          used in the LM/LQ Loop following this MEA Segment.
>           ~~ROX Oxygen Content from Renewable Oxygenates~~ (NOTE:  ROX is no
>            longer represented.)
              A4 Aromatics
              API API Gravity
               D7 Distillation Fraction
              EXH Exhaust Benzene Emissions
              NOX NOx Emissions Performance
              OLE Olefins
              RVP Reid Vapor Pressure
              T50 T50
              T90 T90
              TOX Toxics Emissions Performance
              VOC VOC Emissions Performance
```

```
              ZBZ Benzene
               ZO Oxygen
               ZS Sulphur
MEA03 739  MEASUREMENT VALUE                                  X R 1/10
           The value of the measurement.
>          Required
MEA04 C001 COMPOSITE UNIT OF MEASURE                          R
           To identify a composite unit of measure<R> <R> (See Figures
           Appendix for examples of use.)
>          Refer to the EPA mantained Reformulated Gasoline and
>          Anti-dumping Program MEA Matrix Chart for proper code values.
>          Required
           MEA04-1   355 Unit or Basis for Measurement Code   M 2/2
                         Code specifying the units in which a value is
                         being expressed, or manner in which a
                         measurement has been taken
                          59     Parts Per Million
                          69     Test Specific Scale
                          FA     Fahrenheit
                          ME     Milligram
                          P1     Percent (for oxygen, etc.)
                          PS     Pounds per Sq. Inch
           MEA04-2  1018 Exponent                             O 1/15
                         Power to which a unit is raised.
>                        Not Used
           MEA04-3   649 Multiplier                           O 1/10
                         Value to be used as a multiplier to obtain a new
                         value
>                        Not Used
           MEA04-4   355 Unit or Basis for Measurement Code   O 2/2
                         Code specifying the units in which a value is
                         being expressed, or manner in which a
                         measurement has been taken
                         DH     Miles
>                               Required when MEA04-1 equals ME
           MEA04-5  1018 Exponent                             O 1/15
                         Power to which a unit is raised.
>                        Required to be -1 when reporting Milligrams per Mile
           MEA04-6   649 Multiplier                           O 1/10
                         Value to be used as a multiplier to obtain a new
                         value
>                        Not Used
           MEA04-7   355 Unit or Basis for Measurement Code   O 2/2
                         Code specifying the units in which a value is
                         being expressed, or manner in which a
                         measurement has been taken
>                        Not Used
           MEA04-8  1018 Exponent                             O 1/15
                         Power to which a unit is raised.
>                        Not Used
           MEA04-9   649 Multiplier                           O 1/10
                         Value to be used as a multiplier to obtain a new
                         value
>                        Not Used
           MEA04-10  355 Unit or Basis for Measurement Code   O 2/2
                         Code specifying the units in which a value is
                         being expressed, or manner in which a
                         measurement has been taken
>                        Not Used
           MEA04-11 1018 Exponent                             O 1/15
                         Power to which a unit is raised.
>                        Not Used
```

```
           MEA04-12  649 Multiplier                              O 1/10
                         Value to be used as a multiplier to obtain a new
                         value
>                        Not Used
           MEA04-13  355 Unit or Basis for Measurement Code     O 2/2
                         Code specifying the units in which a value is
                         being expressed, or manner in which a
                         measurement has been taken
>                        Not Used
           MEA04-14 1018 Exponent                               O 1/15
                         Power to which a unit is raised.
>                        Not Used
           MEA04-15  649 Multiplier                              O 1/10
                         Value to be used as a multiplier to obtain a new
                         value
>                        Not Used
MEA05 740  RANGE MINIMUM                                        X R 1/10
           The value specifying the minimum of the measurement range.
>          Not Used
MEA06 741  RANGE MAXIMUM                                        X R 1/10
           The value specifying the maximum of the measurement range.
>          Not Used
MEA07 935  MEASUREMENT SIGNIFICANCE CODE                        O ID 2/2
           Code used to benchmark, qualify or further define a measurement
           value.
               44 Average
               45 Per Gallon
MEA08 936  MEASUREMENT ATTRIBUTE CODE                           X ID 2/2
           Code used to express an attribute response when a numeric
           measurement value cannot be determined.
>          Not Used
MEA09 752  SURFACE/LAYER/POSITION CODE                          O ID 2/2
           Code indicating the product surface, layer or position that is
           being described.
>          Not Used
MEA10 1373 MEASUREMENT METHOD OR DEVICE                         X ID 2/4
           The method or device used to record the measurement
>          Not Used
```

```
  SEGMENT: LM Code Source Information
    LEVEL: Detail
     LOOP: LIN/CID/MEA/LM Repeat: >1
    USAGE: Optional NOTE: Required
  MAX USE: 1
  PURPOSE: To transmit standard code list identification information
 COMMENTS:  A. LM02 identifies the applicable industry code list source
               information.
>   NOTES:  1. Required when using Chemical Abstract Services (CAS)codes to
                identify properties.
>EXAMPLES:  1. LM*CA N/L

DATA ELEMENT SUMMARY ------------------------------------------------

LM01  559  AGENCY QUALIFIER CODE                              M ID 2/2
           Code identifying the agency assigning the code values.
               CA Chemical Abstract Services (CAS)
LM02  822  SOURCE SUBQUALIFIER                                O AN 1/15
           A reference that indicates the table or text maintained by the
           Source Qualifier.
>          Not Used
```

```
  SEGMENT: LQ Industry Code
    LEVEL: Detail
     LOOP: LIN/CID/MEA/LM
    USAGE: Mandatory
  MAX USE: >1
  PURPOSE: Code to transmit standard industry codes
   SYNTAX:  1. C0102--If LQ01 is present, then LQ02 is required.
>EXAMPLES:  1. LQ**64-17-5 N/L

DATA ELEMENT SUMMARY ------------------------------------------------------

LQ01  1270 CODE LIST QUALIFIER CODE                              O ID 1/3
           Code identifying a specific industry code list
>          Not Used
LQ02  1271 INDUSTRY CODE                                         X AN 1/20
           Code indicating a code from a specific industry code list
>          Required to report the following properties. The codes are
>          Chemical Abstract Service Codes and must be communicated with
>          the dashes in the proper location.
>          637-92-3 - ETBE (Ethyl t-Butyl Ether)
>          64-17-5  - Ethanol
>          1634-04-4 - MTBE (Methyl t-Butyl Ether)
>          67-56-1  - Methanol
>          75-65-0  - t-Butanol
>          1784-03-8 - TAME (t-Amyl Methyl Ether)
```

```
  SEGMENT: SE Transaction Set Trailer
    LEVEL: Summary
     LOOP: ____
    USAGE: Mandatory
  MAX USE: 1
  PURPOSE: To indicate the end of the transaction set and provide the
           count of the transmitted segments (including the beginning (ST)
           and ending (SE) segments).
 COMMENTS:  A. SE is the last segment of each transaction set.
>EXAMPLES:  1. SE*59*0001 N/L

DATA ELEMENT SUMMARY ------------------------------------------------------

SE01  96   NUMBER OF INCLUDED SEGMENTS                        M N0 1/10
           Total number of segments included in a transaction set
           including ST and SE segments.
SE02  329  TRANSACTION SET CONTROL NUMBER                     M AN 4/9
           Identifying control number that must be unique within the
           transaction set functional group assigned by the originator for
           a transaction set
>          Must be the same value as ST02.
```

A.3 Sample Batch Report Transmission

```
ST*863*0001  N/L
BTR*00*931225*2300*B1*628307**02  N/L
DTM*458*931223  N/L
N1*PV*NAME*EP*4321  N/L
REF*4A*1234  N/L
PER*AA*G.D.MARSH*TE*610/452-1234*FX*610/453-5432  N/L
PER*CE*PETER R JONES*TE*343/919-4301  N/L
REF*4A*A534*  N/L
N1*ZD**1*873186902  N/L
LIN**B8*CCCCFFFFFRYNNNNNN  N/L
PID*S*08*EP*08****N  N/L
PID*S*38*EP*PR  N/L
PID*S*PG*EP*OP N/L
PID*S*VC*EP*VN  N/L
PID*S*CM*EP*C  N/L
QTY*01*1000000*GA  N/L
DTM*405*931222  N/L
CID**68  N/L
MEA*TR*ZO*2.00*P1***44  N/L
MEA*TR*API*76*69 N/L
MEA*TR**10.25*P1  N/L
LM*CA  N/L
LQ**64-17-5  N/L
CID*D7  N/L
MEA*EN*D7*200*FA  N/L
MEA*TR*D7*13.3*P1  N/L
SE*27*0001  N/L
```

Note: This sample transmission does not contain all of the properties and performance calculations required in a Batch Report.

A.4 Batch Report Detail Map

TABLE 1

POS DE#	SEGMENT/ELEMENT INFORMATION		
010	**ST*863*0001 N/L**		
	Transaction Set Header		
143	ST01	863	Transaction Set ID Code. 863 - Report of Test Results
329	ST02	00001	Incremental Transaction Set Control Number.
020	**BTR*00*931225*2300*B1*628307 N/L**		
	Beginning Segment for Test Results		
353	BTR01	00	Transaction Set Purpose . 00 - Original 15 - Resubmission
373	BTR02	931225	Date the transaction was created - December 25, 1993.
337	BTR03	2300	Time the transaction was created - 11:00 PM.
755	BTR04	B1	Report Type Code. B1 - Batch Report
127	BTR05	628307	Sender's Own Tracking Number. (Optional)
127	BTR06		Previous ST02 when the report is a Resubmission. i.e when BTR01 equals 15. (Optional)
786	BTR07		Optional Security Code. Per Sender's Discretion. **"02" indicates company confidential information.**
050	**DTM*458*931223 N/L**		
	Date/Time Reference		
374	DTM01	458	Date Qualifier. 458 - Certification
373	DTM02	931223	Date the Responsible Corporate Officer certified this Batch Report - December 23, 1993.
080	**N1*PV*NAME*EP*4321 N/L**		
	Name		
98	N101	PV	Entity Identifier Code. PV - Party Performing Certification
93	N102	NAME	Identification Code Qualifier Sender's Company Name
66	N103	EP	Identification Code Qualifier. EP - EPA
67	N104	4321	ID# assigned by the EPA. It is the 4 digit Company ID number assigned at Registration.

120 REF*4A*1234 N/L
Reference Numbers

128	REF01	4A	Reference Number Qualifier. 4A - Personal Identification Number
127	REF02	1234	PIN assigned by the EPA to the corporation responsible for the reported data.

130 PER*AA*G.D.MARSH*TE*610/452-1234*FX*610/453-5432 N/L
Administrative Communications Contact

366	PER01	AA	Contact Function Code. AA - Authorized Representative
93	PER02	G.D.MARSH	Name of the person submitting the report.
365	PER03	TE	Communication Number Qualifier. TE - Telephone
364	PER04	610/....	Telephone Number - 610/452-1234
365	PER05	FX	Communication Number Qualifier. FX - Facisimile
364	PER06	610/....	Facisimile Number - 610/453-5432

130 PER*CE*PETER R JONES N/L
Administrative Communications Contact

366	PER01	CE	Contact Function Code. CE - Certifier See DE 366 for choices. Too many to list here.
93	PER02	Peter R Jones	Name.

140 REF*4A*A534 N/L
Reference Numbers

128	REF01	4A	Reference Number Qualifier. 4A - Personal Identification Number
127	REF02	A534	PIN assigned by the EPA to the individual responsible for the reported data.

080 N1*ZD1*873186902 N/L**
Name

98	N101	ZD	Entity Identification. ZD - Party to Receive Reports.
66	N103	1	Identification Code Qualifier. 1 - D-U-N-S Number, Dun & Bradstreet.
67	N104	873186902	EPA FED Office DUNS Number

TABLE 2

POS DE#	SEGMENT/ELEMENT INFORMATION		
010	**LIN**B8*CCCCFFFFFRYNNNNNN**		**N/L**
	Item Identification		
235	LIN02	B8	Product/Service Qualifier. B8 - Batch Number
234	LIN03	CCCCFFFFFRYNNNNNN	Identification of the volume of gasoline being reported. CCCC - Company Id FFFFF - Facility Id. RY - Reporting Year NNNNNN - Batch Sequential Number [Part 2.0 of bubble report form.]
020	**PID*S*08*EP*XX****N**		**N/L**
	Product/Item Description		
349	PID01	S	Item Description Type. S - Structured (code from industry code list)
750	PID02	08	Product/Process Characteristic Code. 08 - Product
559	PID03	EP	Agency Qualifier Code. EP - U.S. Environmental Protection Agency
751	PID04	XX	Product Description Code. Select one of the following: CB - Conventional Blendstock CG - Conventional Gasoline GT - GTAB-Gasoline treated as Blendstock RO - RBOB - Any Oxygenate RR - RBOB - Any Renewable Oxygenate RE - RBOB - Ethers Only RN - RBOB - Non-VOC Controlled Renewable Ether Only RS - RBOB - Refiner Specified RT - RBOB - Renewable Ether Only RG - Reformulated Gasoline [Part 5.0 of bubble report form.]
1078	PID08	N	Yes/No Condition Code. For Reformulated Gasoline & RBOB only, use this position to indicate whether Independent Laboratory Testing is waived. Y - Yes N - No [Part 7.1 of bubble report form.]

020	**PID*S*38*EP*XX N/L**		
	Product/Item Description		
349	PID01	S	Item Description Type. S - Structured (code from industry code list)
750	PID02	38	Product/Process Characteristic Code. 38 - Grade.
559	PID03	EP	Agency Qualifier Code. EP - U.S. Environmental Protection Agency
751	PID04	XX	Product Description Code. Select one of the following: RG - Regular MG - Mid-Grade PR - Premium [Part 6.0 of bubble report form.]

020	**PID*S*PG*EP*XX N/L**		
	Product/Item Description		
349	PID01	S	Item Description Type. S - Structured (code from industry code list)
750	PID02	PG	Product/Process Characteristic Code. PG - Program
559	PID03	EP	Agency Qualifier Code. EP - U.S. Environmental Protection Agency
751	PID04	XX	Product Description Code. Select one of the following OP - Oxygen Program (OPRG) NP - Non-Oxygen Program (non-OPRG) [Part 7.2 of bubble report form.]

020	**PID*S*VC*EP*XX N/L**		
	Product/Item Description		
349	PID01	S	Item Description Type. S - Structured (code from industry code list).
750	PID02	VC	Product/Process Characteristic Code. VC - VOC Control
559	PID03	EP	Agency Qualifier Code. EP - U.S. Environmental Protection Agency
751	PID04	XX	Product Description Code. Select one of the following V1 - VOC - Control Region 1 V2 - VOC - Control Region 2 VN - Not VOC Controlled [Part 7.3 of bubble report form.]

020 PID*S*CM*EP*XX N/L
Product/Item Description

349	PID01	S	Item Description Type. S - Structured (code from industry code list).
750	PID02	CM	Product/Process Characteristic Code. CM - Compliance Method
559	PID03	EP	Agency Qualifier Code. EP - U.S. Environmental Protection Agency
751	PID04	XX	Product Description Code. Select one of the following: C - Complex Model S - Simple Model AS - Alternative Simple [For EDI reports only.]

> Model

034 QTY*01*1000000*GA N/L
Quantity

673	QTY01	01	Quantity Qualifier. 01 - Discrete Quantity
380	QTY02	1000000	Quantity.
355	QTY03	GA	Unit or Basis for Measurement Code. GA - Gallon [Part 3.0 of bubble report form.]

050 DTM*405*931222 N/L
Date/Time Reference

374	DTM01	405	Date/Time Qualifier. 405 - Production
373	DTM02	931222	End Date the volume of gasoline was produced - December 22, 1993. [Part 4.0 of bubble report form.]

060 CID68 N/L**
Characteristic/Class ID

750	CID02	68	Product/Process Characteristic Code. 68 - Chemistry

NOTE:- The MEA Segment and the LM/LQ Segment Loop when required, are to be repeated for each property to be reported. A measurement segment matrix chart is provided at the beginning of the appendix for identification of precision, units of measure and usage.

One occurrence of an MEA Segment is required when reporting each of the following properties. The codes listed below are the ASC X12 codes for MEA03, DE 738, Measurement Qualifier, that are to be used for those properties.

API - API Gravity
A4 - Aromatics
ZBZ - Benzene
EXH - Exhaust Benzene Emissions
NOX - NOx Emissions Performance
OLE - Olefins

ZO - Oxygen
> ~~ROX - Oxygen from a Renewable Oxygenate~~
RVP - Reid Vapor Pressure
ZS - Sulfur
T50 - T50
T90 - T90
TOX - Toxics Emissions Performance
VOC - VOC Emissions Performance

> *(Note: ROX is no longer represented.)*

The following is an example of reporting a property using an ASC X12 property code.

150 MEA*TR*ZO*2.00*P1*XX N/L**
Measurements

737	MEA01	TR	Measurement Reference ID Code. TR - Test Result
738	MEA02	ZO	Measurement Qualifier. ZO - Oxygen
739	MEA03	2.00	Measurement Value.
C001	MEA04	P1	Composite Unit of Measure. P1 - Percent.
935	MEA07	XX	Measurement Significance Code. Select one of the following: 44 - Average 45 - Per Gallon

When reporting the following properties, it is necessary to use an MEA Segment and associated LM and LQ Segments for each of the properties. The codes are the Chemical Abstract Service (CAS) codes that are to be used to report those properties. The MEA Segment contains a Measurement Reference ID (TR), a Measurement Value and a Unit of Measurement. The LM Segment contains CA in LM01 to reference the Chemical Abstract Service. The LQ Segment contains the property code in LQ02.

637-92-3 - ETBE (Ethyl t-Butyl Ether)
64-17-5 - Ethanol
1634-04-4 - MTBE (Methyl t-Butyl Ether)
67-56-1 - Methanol
75-65-0 - t-Butanol
1784-03-8 - TAME (t-Amyl Methyl Ether)

The following is an example of reporting a property using the CAS property code.

150 MEA*TRXX.XX*P1 N/L**
Measurements

737	MEA01	TR	Measurement Reference ID Code. TR - Test Result
739	MEA03	XX.XX	Measurement Value.
C001	MEA04	P1	Composite Unit of Measure. P1 - Percent

172 LM*CA N/L

	Code Source Information		
559	LM01	CA	Agency Qualifier Code CA - Chemical Abstract Service

173	**LQ**64-17-5 N/L**		
	Industry Code		
1271	LQ02	64-17-5	Industry Code 64-17-5 - Ethanol

Reporting Distillation Fraction at 200 and 300 degrees farenheit requires one occurrence of a CID and two occurrences of the MEA Segment for each temperature.

060	**CID*D7 N/L**		
	Characteristic/Class ID		
750	CID01	D7	Measurement Qualifier D7 - Distillation Fraction

150	**MEA*EN*D7*200*FA N/L**		
	Measurements		
737	MEA01	EN	Measurement Reference ID Code. EN - Environmental Conditions
738	MEA02	D7	Measurement Qualifier D7 - Distillation Fraction
739	MEA03	200	Measurement Value.
C001	MEA04	FA	Composite Unit of Measure. FA - Farenheit

150	**MEA*TR*D7*XX.X*P1 N/L**		
	Measurements		
737	MEA01	TR	Measurement Reference ID Code. TR - Test Result
738	MEA02	D7	Measurement Qualifier D7 - Distillation Fraction
739	MEA03	XX.X	Measurement Value.
C001	MEA04	P1	Composite Unit of Measure. P1 - Percent

TABLE 3

POS DE#	SEGMENT/ELEMENT INFORMATION		
010	**SE*XX*00001 N/L**		
	Transaction Set Trailer		
96	SE01	XX	Number of Included Segments (in the transaction).
329	SE02	00001	Transaction Set Control Number. Must be the same as in ST02.